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FIELD COLUMBIAN MUSEUM

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BOTANICAL SERIES VOL. II, NO. 6.

NEW OR NOTEWORTHY SPERMATOPHYTES FROM MEXICO, CENTRAL AMERICA AND THE WEST INDIES

BY

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New or Noteworthy Spermatophytes from Mexico, Central America, and the West Indies.

By J. M. GREENMAN.

The diagnoses and notes here presented are the results of critical study in the determination of several recent collections of plants from Mexico, Central America and the West Indies, particularly those of Mr. Edward A. Goldman, Professor Cassiano Conzatti, Dr. George F. Gaumer, Professors C. R. Barnes, C. J. Chamberlain and W. J. G. Land, Dr. Charles F. Millspaugh, Dr. J. N. Rose and assistants, Sr. Dr. Fernando Altamirano, Professor W. A. Kellerman, the late Dr. G. M. Emrick, Mr. H. A. Van Hermann, and several others including the writer. The material of certain groups, especially in the genus Senecio collected by Mr. C. G. Pringle, has been generously submitted to me for identification by Professor B. L. Robinson. The new species here proposed in this genus are preliminary to a forthcoming monograph of the North American Senecios.

CYPERUS OCHRACEUS Vahl, Enum. ii. 325 (1805).

Specimens agreeing well with the original description and with West Indian representatives of this species were collected at Laguna, near the City of Vera Cruz, Mexico, 22 January, 1906, *J. M. Greenman*, no. 30 (hb. Field Mus.). This species seems not to have been noted by Hemsley in the Biologia Centrali-Americana.

Hechtia macrophylla Greenman, sp. nov.

Leaves about 1 m. in length, 3.5 cm. broad just above the base, gradually tapering to the apex, glabrous above, lepidote-cinereous beneath; margins spinose; spines 3 cm. or less apart, upwardly curved, 6 mm. or less in length, usually bearing a tuft of persistent white floccose tomentum in the axils: inflorescence paniculate, about 4 dm. long, 1.5 to 2 dm. broad, lepidote-tomentulose; ultimate branches 2 to 12 cm. long, spicate, more or less loosely but evenly flowered throughout their entire length; floral bracts ovate, acute, 4 mm. long: staminate flowers sessile, about 5 mm. long in anthesis, spreading or reflexed; sepals

broadly ovate, 2.5 mm. long, acute; petals elliptic or elliptic-obovate, about 4 mm. long, strongly concave, free or slightly united at the base; ovary rudimentary: pistillate flowers and fruit unknown.— MEXICO. State of Vera Cruz: Carrizal, 12 to 14 May, 1901, *E. A. Goldman*, no. 712 (hb. U. S. Nat. Mus.; fragment and photograph in hb. Field Mus.).

The species here described is apparently nearest related to *Hechtia Schottii* Baker, and *H. texensis* Watson; from the former it differs in having longer leaves, more profusely branched inflorescence, and somewhat smaller floral bracts; from the latter it is readily separated by the longer leaves, the presence of conspicuous tufts of tomentum in the upper axils of the leaf-spines, and by the smaller and more scattered flowers.

HECHTIA SCHOTTII Baker, in Hemsl. Biol. Cent.-Am. Bot. iii. 318 (1884) & Handb. Bromel. 139 (1889); Mez in DC., Monogr. Phan. ix. 548 (1896).

In the herbarium of the Field Museum there is a specimen, collected by Schott in Yucatan, which is unmistakably referable to *Hechtia*. The label accompanying the plant bears no number, and likewise no time of collection, but it bears the data "Maxeana." The specimen consists of leaves, an inflorescence of staminate flowers, and a portion of a panicle bearing mature fruit. The characters exhibited by all these parts agree well with Baker's description, hence the plant is confidently referred to the above species; and, moreover, it probably represents a part of the same collection on which the species was founded. With this species are also identified specimens collected at Xcholac, Yucatan, *Dr. Geo. F. Gaumer*, no. 578 (hb. Field Mus.).

TILLANDSIA BALBISIANA Schult. f. in Roem. & Schult. Syst. vii. 1212 (1830); Mez in DC. Monogr. Phan. ix. 709 (1896). *T. setacea*, Millsp. Field Col. Mus. Bot. Ser. i. 356 (1898), not Sw.

To this species are referred the following.— MEXICO. State of Yucatan: Merida, 11 July, 1865, *Dr. A. Schott*, nos. 842, 842a in part (hb. Field Mus.); Izamal, 21 February, 1906, *J. M. Greenman*, no. 403 (hb. Field Mus.).

TILLANDSIA BRACHYCAULOS Schlecht. Linnaea, xviii. 422 (1844); Morr. Belg. Hort. 1878, 185, t. 11; Baker, Handb. Bromel. 201 (1889); Mez in DC. Monogr. Phan. ix. 732 (1896); Millsp. Field Col. Mus. Bot. Ser. i. 356 (1898).

Fruiting specimens of this species were collected by the writer at Izamal, Yucatan, in February of 1906. These agree in habit and foliar characters with flowering specimens which were secured in the same locality by Dr. A. Schott and also by Dr. Geo. F. Gaumer. The species is widely distributed, occurring from Mexico to South America, and although well known from flowering specimens, the fruit seems not to have been hitherto described, hence the following characterization is here given:

Mature capsules large, 3.5 to 4 cm. long, subcylindrical or obtusely triangular, short-acuminate at the apex; valves dorsally pale-stramineous, glabrous, 1-nerved, recurved and somewhat spirally twisted; exocarp readily separating from the endocarp; seeds including the coma about 3 cm. long.— Mexico. State of Yucatan: Izamal, 21 February, 1906, *J. M. Greenman*, no. 404 (hb. Field Mus.).

Tradescantia floridana Watson, Proc. Am. Acad. xvii. 381 (1882). *Tradescantella floridana* Small, Fl. Southeastern U. S. 238 (1903).

Dr. Sereno Watson very clearly defined the above species and pointed out the characters by which it is readily distinguished from *T. gracilis* HBK. to which it was referred by C. B. Clarke in DC. Monogr. Phaner. iii. 297 (1881). The examination of a considerable number of specimens from Florida and elsewhere shows that Dr. Watson's species retains the distinctive characters originally ascribed to it without any evidence, at least as far as yet observed by the writer, of intergradation with the South American species. It seems best therefore to regard *T. floridana* Watson as well worthy of specific rank. The following specimens are identical in every detail with Dr. Watson's species.— Mexico. State of Yucatan: Izamal, *Dr. Geo. F. Gaumer*, no. 573 (hb. Field Mus.); Chichankanab, *Dr. Geo. F. Gaumer*, no. 1855 (hb. Field Mus.). This species has not been recorded hitherto from Yucatan.

Smilax mollis Humb. & Bonpl. in Willd. Sp. Pl. iv. 785 (1805); A. DC. in DC. Monogr. Phaner. i. 67 (1878); Hemsl. Biol. Cent.-Am. Bot. iii. 365 (1884).

Mature fruiting specimens of this species were collected on old sand dunes along the shore, north of the City of Vera Cruz, 24 January, 1906, *J. M. Greenman*, no. 116 (hb. Field Mus., and hb. Kew). The mature fruit in the fresh state is bright red.

I am indebted to Lieut.-Col. David Prain, Director of the Royal Botanic Gardens, Kew, for the identification of this plant.

Pouzolzia Pringlei Greenm. Proc. Am. Acad. xxxiii. 476 (1898).

This species, hitherto known only by Mr. Pringle's no. 6736 from Tomellin Canyon, has been recollected at El Parion, District of Etla, Oaxaca, Mexico, altitude 1,400 m., 2 September, 1906, *C. Conzatti* no. 1551 (hb. Field Mus.). While Señor Conzatti's specimens present no additional characters, yet the collection records a second station towards mapping the distribution of the species.

Psittacanthus auriculatus, Oliver, acc. to Eichl., in Mart. Fl. Bras. v. II, 25 (1866). *Loranthus auriculatus* D. Oliver in Kjoeb. Vidensk. Meddel. 1864, p. 174.

To this well marked species are referred specimens collected at Alturas de Ejutla, Oaxaca, Mexico, altitude 1,300 m., 13 December, 1907, *C. Conzatti*, no. 1641 (hb. Field Mus.).

PHORADENDRON MUCRONATUM Krug & Urban in Engl. Bot. Jahrb. xxiv. 34 (1897). *P. flavescens* Millsp. Field Col. Mus. Bot. Ser. i. 294 (1896) in part, not Nutt.

MEXICO. State of Yucatan: near Izamal, *Dr. Geo. F. Gaumer*, no. 561 in part (hb. Field Mus.). Dr. Gaumer's specimens correspond in every essential detail with the descriptions of this species, and with material in the herbarium of the Field Museum from the West Indies and from South America. This species seems not to have been reported hitherto from Mexico or Central America.

PHORADENDRON QUADRANGULARE Krug & Urban in Engl. Bot. Jahrb. xxiv. 35 (1897) & Urban, Symb. Antil. iv. 207 (1905).

Fruiting specimens of this species were collected near the coast north of the City of Vera Cruz, Mexico, 24 January, 1906, *J. M. Greenman*, no. 120 (hb. Field Mus.).

Phoradendron vernicosum Greenman, sp. nov.

Glabrous throughout: younger parts more or less vernicose: stems and branches terete; ultimate branchlets compressed at the nodes: leaves lanceolate-oblong to ovate-elliptic, often slightly oblique or subfalcate, 2 to 7 cm. long, 1 to 2.7 cm. broad, obtuse or rounded at the apex, entire, narrowed below to a subpetiolate base, 3–5-nerved: spikes sessile or essentially so, 1 to 3 (rarely 5) in the leaf-axils, 1 to 2 cm. long; segments 2 to 5 (usually 4), 5 mm. or less in length, 6–12-flowered in the staminate spike, 2-flowered in the pistillate spike; perianth 3-merous: berry ovate-oblong, about 5 mm. long, not contracted below the calyx-limb, more or less glaucous; endocarp distinct, ovate-oblong, 4 mm. long, 2 mm. wide, abruptly acuminate.— *P. flavescens*, Millsp. Field Col. Mus. Bot. Ser. 1. 294 (1896) in part, not Nutt.— MEXICO. State of Yucatan: Izamal, 22 February, 1906, *J. M. Greenman*, no. 440 (hb. Field Mus.), type; Silam, June, 1895, *Dr. Geo. F. Gaumer*, no. 876 (hb. Field Mus.); Chichankanab, *Dr. Geo. F. Gaumer*, nos. 1850, 2011 (hb. Field Mus.).

The vernicose character of the young stem and leaves, the short axillary inflorescences, the two-flowered segments of the fertile spike and the distinctly acuminate endocarp well characterize this species. The nearest affinity of *P. vernicosum* is with *P. Wattii* Krug & Urban, from which it differs in having relatively shorter and broader leaves, the fruit not constricted below the limb of the calyx, and a smaller and distinctly acuminate instead of acute endocarp.

MILLSPAUGHIA ANTIGONOIDES Rob. in Engl. Bot. Jahrb. xxxvi. Beibl. 80: 14 (1905).

In addition to the specimens cited in the original publication

of this very interesting genus the following collections in the herbarium of the Field Museum represent further the above species.— Mexico. State of Yucatan: Merida, April, 1865, *Dr. A. Schott*, no. 217; Colonia San Cosme, 20 February, 1906, *J. M. Greenman*, no. 348; Izamal, collection of 1888, *Dr. Geo. F. Gaumer*, without number; Izamal, *Dr. Geo. F. Gaumer*, nos. 3001, 3002, 3004; Puerto Morelos, 12 to 31 March, 1901, *E. A. Goldman*, no. 626 (hb. U. S. Nat. Mus.; fragment in hb. Field Mus.).

Guatteria Gaumeri Greenman, sp. nov. Tree, 10 to 15 m. high: stem and branches covered with a gray bark; ultimate branchlets glabrous or sparingly strigulose-puberulent: leaves alternate, petiolate, lanceolate to elliptic-lanceolate, 5 to 15 cm. long, 2 to 2.5 cm. broad, usually short-acuminate and obtuse, rarely retuse at the apex, entire, glabrous on both surfaces or in the very early stages slightly pubescent with a few scattered appressed hairs, soon glabrate and rather strongly reticulate-nerved; petioles stoutish, 3 to 10 mm. long, canaliculate, often turning blackish in the dried state: inflorescence terminal or lateral; peduncles thickish, 1 to 3 cm. in length, jointed, sparingly pubescent with appressed tawny hairs, bracteate at the base and usually bearing a single ovate acute or acutish ciliate ferrugineous-pubescent bract below the middle: sepals subrotund, 3 to 5 mm. high, usually broader than long, ciliate and sparingly pubescent to glabrous: petals large, oblong-ovate to somewhat obovate, 2 to 4.3 cm. long, 1.2 to 3 cm. broad, thick and leathery: berries numerous, elliptic-obovoid, about 1 cm. long, 7 to 8 mm. in diameter, minutely verrucose, glabrous: stipes slender, 1.5 cm. or less in length; torus somewhat depressed-globose.— Mexico. State of Yucatan: vicinity of Izamal, specimens communicated February, May, June, and July, 1906, *Dr. Geo. F. Gaumer* (hb. Field Mus., catalogue nos. 189976–189978, 189160, 189161). In general appearance the species here proposed resembles *G. dolichopoda* Donn. Sm., but it differs in the less acuminate and blunt leaves, character of the pubescence, subrotund sepals, larger petals, shorter peduncles and stipes.

G. Gaumeri is rich throughout all its parts in oil-glands, and when crushed it produces a pleasant aromatic odor. Dr. Gaumer in whose honor the species is named states that the plant is known about Izamal under the name of "*Elemuy*," and that from it is obtained one of the most valuable medicines used in Yucatan.

Tristicha hypnoides Spreng. Syst. Veg. iv. pt. 2, 10 (1827); DC. Prodr. xvii. 44 (1873); Hemsl. Biol. Cent.-Am. Bot. iii. 39 (1882).

Specimens well representing this species were found growing on stones under water near Cordoba, State of Vera Cruz, Mexico, 25 January, 1906, *J. M. Greenman*, no. 124 (hb. Field Mus.). This interesting species, known from Cuba, from Guatemala to Brazil, from tropical and south Africa and Madagascar, seems not to have been recorded hitherto from Mexico. Specimens

collected at Cordoba by Dr. Asa Gray and referred by him to the above species, although no published record of them has been found by the writer, bear somewhat larger fruit than my number 124, but differ in no other apparent regard.

Caesalpinia yucatanensis Greenman, sp. nov.

Shrub or small tree: stem covered with a light gray bark, dotted with numerous lenticels, glabrous; cortex defoliating in thin scarious layers; ultimate branchlets puberulent; leaves alternate, bipinnate, petiolate, unarmed; petioles 2 to 6 cm. long; pinnae 2 to 3 pairs; leaflets 2 to 4 pairs, oblong-elliptic, 1.5 to 4 cm. long, 0.7 to 2.5 cm. broad, obtuse to rounded at both ends or slightly retuse at the apex, entire, glabrous on both surfaces or somewhat pubescent in the early stages and glabrate; midrib slightly sunken from the upper surface and, as well as the lateral nerves, somewhat prominent beneath; petiolules 1 to 1.5 mm. long: inflorescence usually in terminal panicles, 0.5 to 1.5 dm. in length, occasionally terminating the lateral branches in simple racemes, finely pubescent; pedicels 1 to 2 cm. long, jointed above the middle, pubescent: calyx about 1 cm. long, 5-parted; segments oblong-rotund, imbricated, densely soft-pubescent on the outer surface: petals oblong to oblong-obovate, about 1.5 cm. long, 8 to 10 mm. broad, narrowed at the base into a villous-pubescent claw, chocolate-brown or dark red in color and margined with pale yellow, covered externally in the lower half with sessile or short-stipitate glands; the uppermost petal producing a short fold on the inside near the base: stamens barely exserted; filaments pubescent with more or less matted hairs: ovary and lower part of the style densely pubescent: mature fruit sessile, oblong, slightly oblique, 6 to 12 cm. long, 2 to 2.5 cm. broad, short-pubescent and closely beset with stipitate tack-shaped glands; seeds suborbicular, flat, about 1 cm. in diameter, smooth.— *Caesalpinia exostemma* Millsp. Field Col. Mus. Bot. Ser. i. 21 (1895), not Moc. & Sesse ex DC.— MEXICO. State of Yucatan: vicinity of Izamal, collection of 1895, *Dr. Geo. F. Gaumer*, no. 371 (hb. Field Mus.), type; near Izamal, 13 January, 1895, *Dr. C. F. Millspaugh*, no. 75 (hb. Field Mus.); Izamal, 22 February, 1906, *J. M. Greenman*, no. 417 (hb. Field Mus.); San Anselmo, *Dr. Geo. F. Gaumer*, no. 1715 (hb. Field Mus.); near Merida, *Dr. A. Schott*, without number (hb. Field Mus.); on old hennequin plantations near Merida, February, 1903, *C. & E. Seler*, no. 3844 (hb. Field Mus.); Colonia San Cosme, 20 February, 1906, *J. M. Greenman*, no. 349 (hb. Field Mus.); Itzimna, 19 February, 1906, *J. M. Greenman*, no. 335 (hb. Field Mus.); near Progresso, 5 March, 1899, *Dr. C. F. Millspaugh*, no. 1660 (hb. Field Mus.); without definite locality, coll. of 1896, *Sr. Porfirio Valdez*, no. 7 in part (hb. Field Mus.). State of Campeche: without locality, *Dr. Henry Perrine* (hb. Gray, and hb. Torrey).

This species is related to *C. exostemma* Moc. & Sesse ex DC.

with which it has been confused, but from which it differs in having a pubescent inflorescence, more oblong and copiously glandular petals, in having also the inner or upper petal less conspicuously clawed and bearing a scale-like fold on the inner or upper side near the base, and finally by the shorter barely exserted stamens.

Phaseolus (§Drepanocarpos) polyanthus Greenman, sp. nov.

Stem robust, angulate-striate, sparingly pubescent with ascending, spreading or even reflexed hairs: leaves petiolate, trifoliolate; petioles 4 to 10 cm. long, slightly pubescent; stipules triangular-ovate, 5 to 6 mm. long, acute; leaflets rhombic-ovate, or the lateral obliquely ovate, 4 to 10 cm. long, 3 to 9 cm. broad, mucronate-acute, entire, subtruncate to obtuse at the base, dark green and substrigose-hirsute above, slightly paler and hirtellous-puberulent beneath, more or less glabrate, 3-nerved and bearing tufts of white villous hairs in the axils of the veins on the under side; petiolules stoutish, about 5 mm. long, densely tawny-hirsute above; stipels subfalcate-linear, 3 to 4 mm. long, glabrous or essentially so: inflorescence in elongated axillary racemes, 2.5 dm. or less in length; rhachis pubescent; bracts lance-attenuate, about 7 mm. long, pubescent; pedicels becoming 12 mm. in length, glabrous or nearly so, and as well as the bracts persistent; bracteoles subtending the calyx, linear-lanceolate to lance-oblong, 6 to 7 mm. long, 1 to 1.5 mm. broad, acute, 3–5-nerved, ciliolate: calyx about 5 mm. high, subbilabiate, or 2-lobed; tube 3 mm. long; upper lobe emarginate; the lower lobe 3-toothed with the midddle tooth ovate, acute, 2 mm. long, the lateral teeth shorter and obtuse: vexillum somewhat oblong-obovate, 12 mm. long, nearly or quite as broad, short-unguiculate with a broad claw; disk barely exceeding 1 mm. in length, crenate-margined: ovules commonly 6: mature fruit not seen.— Mexico. State of Vera Cruz: on railroad banks near Jalapa, 10 September, 1906, *C. R. Barnes, C. J. Chamberlain & W. J. G. Land*, no. 20 (hb. Field Mus., and hb. University of Chicago). The species is rather striking on account of the large membranous leaflets, many-flowered inflorescences, persistent pedicels, and the narrow bracts and bracteoles. It suggests *P. multiflorus* Willd. and *P. pedicellatus* Benth, but is quite distinct from either of them.

Astrocasia Rob. & Millsp. in Engl. Bot. Jahrb. xxxvi. Beibl. 80: 19 (1905).

This genus was first described from staminate specimens only. Fertile plants are now at hand, and additional generic characters may be given as follows:—Pistillate flowers solitary or fascicled. Ovary 3-celled; cells 2-ovuled; stigma sessile, 3-lobed, fleshy. Disk cupular. Capsule septicidally dehiscent, each carpel splitting vertically into equal halves; exocarp readily separating from the endocarp. Seeds ecarunculate.

A. PHYLLANTHOIDES Rob. & Millsp. l. c. 20. *Phyllanthus nutans* Millsp. Field Col. Mus. Bot. Ser. i. 306 (1896), as to *Gaumer*, nos. 475, 685, & in Engl. Bot. Jahrb. l. c. 19, not Sw.

A dioecious shrub 1 to 2 m. high: fully developed leaves 4 to 13 cm. long, two-thirds as broad: pistillate flowers few; pedicels rather slender, 2.5 to 4.5 cm. long, gradually enlarged towards the base of the calyx; sepals broadly ovate, ovate-oblong or slightly obovate, 2 to 3 mm. long, two-thirds as broad, reflexed; petals 5, erect or nearly so, oblong-lanceolate, 4 to 5 mm. long, 1.5 mm. broad, crenate-undulate; disk 5-lobed: mature capsule about 8 mm. long, nearly or quite as broad, smooth and glabrous; seeds two in each cell, ovoid, 4 to 5 mm. long, smooth, brownish.— MEXICO. State of Yucatan: Vicinity of Izamal, *Dr. Geo. F. Gaumer*, no. 475 (hb. Field Mus.); Temax, *Dr. Geo. F. Gaumer*, no. 685 (hb. Field Mus.); Calotmul, *Dr. Geo. F. Gaumer*, no. 1795 (hb. Field Mus.); Chichankanab, *Dr. Geo. F. Gaumer*, nos. 1261, 1794 (hb. Field Mus.); Mayapan, *C. & E. Seler*, no. 3874 (hb. Field Mus.); Itzimna, near Merida, *C. & E. Seler*, no. 3943, type, (hb. Field Mus.); near Izamal, 21 February, 1906, *J. M. Greenman*, no. 392 (hb. Field Mus.). State of Campeche: Apazote, near Yohaltun, *E. A. Goldman*, no. 491 (hb. U. S. Nat. Mus., and hb. Field Mus.). Flowering and fruiting specimens of this species were collected by the writer in February of 1906 near Izamal, Yucatan, where the plant is quite abundant, and where it is one of the most attractive shrubs in the "scrub" formation.

Acalypha Seleriana Greenman, sp. nov.

Shrub, 1 to 2.5 m. high, branched; stem and branches covered with a reddish-brown or grayish bark and dotted with numerous lenticels; the younger branchlets densely pubescent with short horizontally spreading tawny hairs: leaves petiolate, ovate to oblong-lanceolate, 2.5 to 5 cm. long, 1 to 3 cm. broad, acute or obtuse, dentate or crenate-dentate, obtuse to rounded at the base, 3-nerved, thin and membranous, at first pubescent on both surfaces especially on the veins beneath, later more or less glabrate; petioles 3 to 18 mm. long, densely pubescent; stipules lance-linear, 1.5 to 2 mm. long; caducous: inflorescence chiefly axillary: spikes of fertile flowers inconspicuous, slender, few-flowered: pistillate flowers small, sessile, solitary in the axils of minute 3-parted bracts about 0.5 mm. high: calyx 1 mm. long, 5-parted into narrowly lanceolate acute divisions, sparingly pubescent: ovary muricate-hispid; style 3-parted, or occasionally 2-parted; divisions thickened and roughish at the base, branching into about 9 laciniate-fimbriate divisions: spikes of staminate flowers numerous, uniaxillary, slender, sessile or short-pedunculate, 1 to 8 cm. long, 2 to 3 mm. thick, erect, spreading, or occasionally more or less reflexed: mature capsules and seeds not seen.— *A. mollis* Millsp. in Field Col. Mus. Bot. Ser. i. 302 (1896), & in Engl. Bot. Jahrb. xxxvi. Beibl. 80: 19

(1905), not HBK.— Mexico. State of Yucatan: in forests about Xkombec, 5 April, 1903, *C. & E. Seler*, no. 4028 (hb. Field Mus.), type; in forests near Xcolumkin, 5 April, 1903, *C. & E. Seler*, no. 4040 (hb. Field Mus.); in forests about Izamal, March-April, 1895, *Dr. Geo. F. Gaumer*, no. 477 (hb. Field Mus., and hb. Gray), and in the same locality coll. of 1888, *Dr. Geo. F. Gaumer*, specimens without number (hb. Field Mus.); vicinity of Izamal, 21 February, 1906, *J. M. Greenman*, no. 390 (hb. Field Mus.).

Acalypha mollis HBK. to which species some of the specimens above cited have been hitherto referred is described as an herbaceous plant with distinctly pedunculate spikes, and with 2–3-flowered reniform-ovate-11-15-dentate bracts. On these characters alone *A. Seleriana* may be readily separated. The species here proposed seems to be quite unique on account of the shrubby habit, the numerous sender sessile or subsessile spikes of staminate flowers, and the pistillate flowers solitary in the axils of exceedingly minute 3-parted bracts.

Dalechampia Schottii Greenman, sp. nov.

Stems twining, covered below with a grayish bark; branches terete, striate, pubescent with spreading or reflexed hairs: leaves petiolate, simple and undivided, subtrinervate from the base, ovate or ovate lanceolate, 2-7.5 cm. long, 1.5-4 cm. broad, rounded to acuminate at the apex, mucronate-acute, subentire or somewhat dentate in the lower half, obtuse to subcordate at the base, usually bearing on the upper side at the junction of petiole and blade two subulate appendages, pubescent on both surfaces, glabrate above; petioles 0.5-2.5 cm. long, pubescent; stipules narrowly lanceolate to almost subulate, 2-6 mm. long: peduncles 1-3 cm. long, striate, pubescent; the petaloid involucral bracts small, ovate, 6-12 mm. long, 3-8 mm. broad, acuminate or merely acute at the apex, obtuse at the base, 3-nerved, sparingly denticulate, externally pubescent, ciliate: calyx of the staminate flowers 6-parted; divisions lanceolate, 2-2.5 mm. long, acute, entire, glabrous: calyx of pistillate flowers 7–12-parted; divisions linear-lanceolate, about 5 mm. long during anthesis, pectinate and hirsute-pubescent, persistent and becoming 1 cm. in length at maturity; ovary 3-celled, puberulent; style cylindrical, stoutish; stigma subtrilobed, not dilated: capsule depressed-globose, inconspicuously puberulent, reddish-brown or blackish in the dried state; seeds subglobose, about 3.5 mm. long, rugulose.— Mexico. State of Yucatan: Merida, 3 August, 1865, *Dr. A. Schott*, nos. 534, 956 (hb. Field Mus.), type; Chichankanab, *Dr. Geo. F. Gaumer*, nos. 1430 in part, 1463 (hb. Field Mus.); Merida, February, 1903, *C. & E. Seler*, no. 3836 (hb. Field Mus.) distributed as "*Dalechampia denticulata* Griseb.?;" Izamal, 22 February, 1906, *J. M. Greenman*, no. 422 (hb. Field Mus.).

Var. **trifoliolata** Greenman, var. nov.

Leaves simple or trifoliolate; divisions lanceolate, entire or

somewhat irregularly dentate: other characters as in the species. —MEXICO. State of Yucatan: Chichankanab, *Dr. Geo. F. Gaumer*, nos. 1512, 1430 in part (hb. Field Mus.).

Some of the specimens above cited have been hitherto doubtfully referred to *Dalechampia denticulata* Wright of the West Indies. From this species, however, *D. Schottii* differs in having uniformly smaller leaves, shorter petioles, smaller floral bracts and a nondilated stigma. Moreover, in *D. denticulata* the leaves and floral bracts are distinctly cordate, while in *D. Schottii* the leaves are from obtuse to subcordate at the base and the floral bracts are narrowed below to an obtuse base. The variety *trifoliolata* suggests *D. triphylla, var. mexicana* Müll. Arg., but the latter has petioles very much longer in proportion to the length of the leaf-blade.

Jatropha Gaumeri Greenman sp. nov.

Tree, 5 to 10 m. high, much-branched: trunk 2 to 5 dm. in diameter; branches and branchlets thick and somewhat fleshy: leaves alternate, petiolate, palmately 7-nerved, broadly ovate, 5 to 18 cm. long, 4.5 to 15 cm. broad, abruptly caudate-acuminate, acute, entire, or occasionally subdenticulate in the lower portion, rarely sublobate, deeply cordate to subtruncate at the base, membranous, glabrous above, tawny-pubescent along the veins at the base of the blade beneath, otherwise glabrous; petioles 2.5 to 13 cm. long, glabrous except near the blade: inflorescence in terminal or axillary short-pedunculate compound cymes, 2.5 cm. or less in length, glabrous or with a few tawny hairs in the axils of the deltoid or triangular-ovate acute glabrous bracts; peduncles 1 cm. or less in length: flowers sessile, monoecious, whitish or cream-colored: calyx gamosepalous, 2 to 3 mm. high, glabrous, 5-lobed, persistent; lobes erect in anthesis, subrotund, slightly unequal, entire: corolla 6 to 7 mm. long, tubular for about two-thirds its length, externally glabrous, densely ferruginous-pubescent towards the base within; lobes 5, erect or slightly spreading, oblong-ovate, rounded at the apex: glands usually 5, occasionally 3: stamens 8, included; the outer series or cycle consisting of 5 distinct stamens about equalling the more or less coalescent filaments of the 3 inner stamens; anthers oblong, acutish: capsule oblong-globose, subtriangular in cross-section, 15 to 18 mm. long, nearly or quite as broad, glabrous, septicidally dehiscent; the carpels later splitting along the median line: seeds carunculate, oblong, about 13 mm. long, 11 mm. broad, slightly roughened.— *Ficus Jaliscana* Millsp. Field Col. Mus. Bot. Ser. i. 293 (1896), not Watson. *Jacaratia Mexicana* Millsp. l. c. 35 (1895), not DC. — MEXICO. State of Yucatan: near Izamal, collection of 1895, *Dr. Geo. F. Gaumer*, no. 365 (hb. Field Mus.); San Anselmo, *Dr. Geo. F. Gaumer*, no. 1705 (hb. Field Mus.); near Izamal, 15 January, 1895, *Dr. Chas. F. Millspaugh*, no. 96 (hb. Field Mus.); vicinity of Izamal, 22 February, 1906, *J. M. Greenman*, no. 478 (hb. Field Mus.).

In leaf-outline and in the pubescence of the leaf the species here proposed suggests *J. yucatanensis* Briquet in Ann. Conserv. & Jard. Bot. Genève, iv. 230 (1900), but it differs in having larger leaves which are abruptly caudate-acuminate and terminated by a very slender acumen, shorter peduncles, essentially glabrous inflorescence, deltoid bracts, sessile flowers, and 8 instead of 10 stamens.

The plant grows as a rather profusely branching tree with thick and somewhat fleshy branches and twigs. The almost leafless condition of the tree and its light gray appearance render it a conspicuous feature of the "scrub" and woodlands about the City of Izamal. It passes under the Mayan name of "Pomolché;" and its stems are said to be used by the native people in making the so-called "Chul" or whistles.

Gouania Conzattii Greenman, sp. nov.

Stem terete or slightly angulate above, sparingly pubescent; leaves alternate, petiolate, ovate or subrotund-ovate, rounded to short-acuminate and submucronate-acute at the apex, crenate-dentate, shallowly cordate at the base, dark green and hirsute-pubescent above in the younger stages, more or less glabrate, subtomentose beneath; midrib and veins prominent on the under side of the leaf; petioles 1 cm. or less in length: inflorescence terminating the stem and upper branches in spicate racemes together forming a more or less leafy panicle: flowers sessile, or on very short pedicels: calyx-limb 5-lobed; lobes triangular-ovate, acute, entire, externally as well as the entire inflorescence tawny-pubescent; disk distinctly 5-lobed and the lobes about one-half as long as the lobes of the calyx, 2-dentate and more or less persistent: petals strongly cucullate, 1 mm. long: mature capsules triangular, 6 to 7 mm. high, including the strongly developed wings 7 to 9 mm. in diameter, glabrous or nearly so; seeds oval, 3 to 4 mm. long, smooth and shining, convex on the outer surface, 2-faced and more or less 2-scalloped on the inner surface.— Mexico. State of Oaxaca: Cerro San Felipe, altitude 1,700 m., 15 September, 1906, *C. Conzatti*, no. 1567 (hb. Field Mus.). Habitally and in leaf-outline *G. Conzattii* resembles *G. tomentosa* Jacq., but differs in having a sparingly pubescent stem, larger flowers, and also in bearing capsules which are nearly twice as long in the vertical axis, and producing seeds which are fully twice larger than *G. tomentosa*.

Macroscepis obovata HBK. Nov. Gen. & Sp. iii. 201, t. 233 (1818); DC. Prodr. viii. 599 (1844); Hemsl. Biol. Cent.-Am. Bot. ii. 320 (1881).

Specimens agreeing in all details with the original description and illustration of this species were collected at Izamal, Yucatan, by *Dr. Geo. F. Gaumer*, no. 1198 (hb. Field Mus.), and again at Chichankanab by the same collector, no. 2239 (hb. Field Mus.). This species has not been recorded hitherto from Yucatan.

Ipomoea Conzattii Greenman, sp. nov.

Stem ligneous, covered with a gray bark and dotted with numerous lenticels; ultimate branches pubescent; leaves not seen: inflorescence in axillary, sessile, or short-pedunculate 1–several-flowered (1-16) more or less nodding sericeous-hirsute cymes; bracts triangular-acuminate, acute, caducous; pedicels 1 to 2 cm. long, upwardly thickened, striate, pubescent: calyx about 7 mm. high; sepals ovate-rotund to broadly ovate, 5 to 7 mm. long, nearly or quite as broad, rounded or slightly emarginate and submucronate at the apex, the outermost densely sericeous-hirsute on the outer surface, the inner slightly pubescent to glabrous externally, scarious-margined and often tinged with purple: corolla tubular-campanulate, 3.5 to 4.5 cm. long, externally glabrous; tube subcylindrical 2.5 to 3 cm. long, more or less abruptly expanded into the 5-lobed limb, purple or somewhat magenta-colored in the dried state: stamens included or barely exserted; filaments bearing a tuft of coarse hairs at their insertion near the base of the corolla: style more or less persistent: capsule subglobose, about 1 cm. in diameter, smooth and glabrous; seeds 2 in each cell, oblong-ovate, 9 mm. long, bearing from its apex a reflexed coma somewhat exceeding the body of the seed.— MEXICO. State of Oaxaca: Almoloyas, altitude 800 m., 25 December, 1906, *C. Conzatti*, no. 1666 (hb. Field Mus.).

It is with some hesitation that the writer describes a leafless plant as new to science, but the present one is so distinctive in its ligneous stem, inflorescence and floral characters that it seems best to present the above characterization. The species is named in honor of the distinguished botanist, Professor Cassiano Conzatti, Director of the Normal School in the City of Oaxaca, Mexico.

IPOMOEA TENTACULIFERA Greenm. Proc. Am. Acad. xxxiii. 482 (1898).

Specimens collected on the Cerro San Felipe, Oaxaca, Mexico, altitude 1,700 m., 12 August, 1906, *C. Conzatti*, no. 1618 (hb. Field Mus.), match perfectly the original material secured by Mr. C. G. Pringle in Tomellin Cañon in 1897. Professor Conzatti's specimens in addition to perfect flowers show well developed fruit. The capsules are spherical-ovate, nearly or quite 1.5 cm. high, fully 1 cm. in diameter, smooth and glabrous with a single well developed seed in each cell.

Stachytarpheta purpurea Greenman, sp. nov.

Suffruticose: stems terete or slightly 4-angled, hirsute-pubescent: leaves opposite, rhombic-ovate, 2 to 5 cm. long, 1 to 2.4 cm. broad, rounded or acute at the apex, crenate-serrate, rather abruptly contracted below the middle to an entire base, hirsute-hispid and more or less rugose above, slightly paler and more densely hirsute beneath: inflorescence terminating the stem and branches in slender elongated spikes, 2 to 2.5 dm. or less in length; rhachis sparingly pubescent, 2 mm. or less in diameter; floral bracts rather remote, ovate, abruptly acuminate, 4 to 5 mm.

long, 2 to 2.5 mm. broad, glabrous or nearly so, ciliate and, as well as the entire inflorescence, more or less purplish: calyx tubular, about 7 mm. long, minutely 4-toothed, glabrous except along the ribs, posteriorly parted for about one-third its length, or occasionally parted both posteriorly and anteriorly: corolla trumpet-shaped, 1 to 1.5 cm. long, 10 to 13 mm. in diameter when fully expanded; tube curved, glabrous without, hairy within; limb 5-lobed; lobes broader than long: stamens included: staminodia pubescent: style exserted: fruit oblong, 4 mm. long, glabrous.— Mexico. State of Vera Cruz: hillsides near Chavarillo, 7 September, 1906, *C. R. Barnes, C. J. Chamberlain & W. J. G. Land*, no. 48 (hb. Field Mus., and hb. University of Chicago).

Citharexylum Altamiranum Greenman, sp. nov.

Stem and branches covered with a rough gray bark; ultimate branchlets hexangular, brownish, short-hirsute pubescent: leaves opposite, petiolate, ovate, ovate-oblong to subrotund, 1 to 4 cm. long, 0.5 to 2.5 cm. broad, obtuse to rounded or occasionally emarginate at the apex, entire or not infrequently with one or two teeth towards the apex, ciliate, hirsute-pubescent on both surfaces, slightly paler beneath, usually bearing one to three disc-like glands on the blade; petioles 3 to 15 mm. long, pubescent: inflorescence terminating the branchlets in pubescent few-flowered spicate racemes, 1 to 3 cm. in length; bracts subulate, exceeding the short pedicels: flower not seen: calyx persistent and in the fruiting stage becoming somewhat chartaceous, turbinate, 4 to 4.5 mm. high, 5–angulate-keeled at the base, distinctly 5-dentate with short erect acute teeth, slightly pubescent on both inner and outer surfaces, ciliate about the orifice: mature fruit oblong-elliptic, 7 to 8 mm. long in the dried state; pyrenae elliptic, 6 to 7 mm. long, concavo-convex, smooth.— Mexico. State of Queretaro: Hacienda del Ciervo, between San Juan del Rio and Cadereyta, 20 August, 1905, *J. N. Rose, Jos. H. Painter & J. S. Rose*, nos. 9666, 10,268 (hb. U. S. Nat. Mus., and hb. Field Mus.); del Ciervo al cerro de la mesa, 20 August, 1905, *Dr. F. Altamirano*, no. 1566 (hb. U. S. Nat. Mus.; fragment in hb. Field Mus.).

The plant here described suggests in general appearance *C. Berlandieri* Rob., but differs in having smaller leaves, fewer-flowered inflorescence and in its calyx characters. The species is named in honor of the distinguished Mexican naturalist, Sr. Dr. Fernando Altamirano, Director of the National Medical Institute in the City of Mexico.

Citharexylum cinaloanum Rob. in Bot. Gaz. xvi. 342 (1891).

To this species the following specimens are referred.— Mexico. State of Sinaloa: near Rosario, on the road to Acaponeta, 27 July, 1897, *Dr. J. N. Rose*, no. 1858 (hb. U. S. Nat. Mus., and hb. Field Mus.); between Rosario and Concepcion, 23 July, 1897, *Dr. J. N. Rose*, no. 3269 (hb. U. S. Nat. Mus., and hb.

Field Mus.). The affinity of *C. cinaloanum* is in all probability with the obscure *C. scabrum* Moc. & Sesse, and it may eventually prove to be conspecific. The leaf-margins on an individual plant often vary from entire to conspicuously dentate in the apical portion; and the inflorescence, here as in several other species of the genus, may be either simple or compound.

Citharexylum Rosei Greenman, sp. nov.

Stem and branches covered with a grayish or reddish brown cortex, terete or subtetragonal; ultimate branchlets 4-angled, cinereous-hirsute: leaves opposite, lanceolate or oblanceolate, 1 to 3 cm. long, 1 cm. or less broad, obtuse to rounded at the apex, entire, narrowed below to a subpetiolate base, hirtellous-pubescent on the upper surface, cinereous-tomentulose beneath: inflorescence terminating the branchlets in few-flowered short racemes; pedicels 3 to 4.5 mm. long: flowers not seen: calyx persistent and in the fruiting stage 2 to 2.5 mm. high, shallow, somewhat saucer-shaped, truncate, pubescent: mature fruit oblong, 7 to 8 mm. long in the dried state; pyrenae elliptic, 6 to 7 mm. long, concavo-convex, strongly corrugated on the outer or convex surface.— MEXICO. State of Queretaro: between Higuerillas and San Pablo near the latter station, 24 August, 1905, *J. N. Rose, Jos. H. Painter & J. S. Rose*, no. 9827 (hb. U. S. Nat. Mus., and hb. Field Mus.). This species resembles *C. Altamiranum* to which it is closely related, but from which it differs amply in having smaller leaves of different outline, a more dense tomentum, and in its shorter, shallower and truncate calyx, and corrugated pyrenae.

Vitex Gaumeri Greenman, sp. nov.

Tree, 10 to 15 m. in height: branches covered with a grayish bark; ultimate branchlets tawny-pubescent: leaves opposite, petiolate, palmately compound; petioles 3 to 9.5 cm. long, velvety pubescent; leaflets 5 to 7, petiolulate, ovate to elliptic-oblong, rarely tending to become obovate, 1.5 to 11 cm. long, 0.5 to 5. cm. broad, usually short-acuminate and acute or occasionally rounded at the apex, entire, obtuse to subcordate at the base, dark green and pubescent above, glabrate in age, pale and densely tomentulose beneath; midrib and lateral veins prominent on the under surface, but the anastomosing of the ultimate veins not conspicuously reticulated; petiolules 0.5 to 2.7 cm. in length, velvety pubescent: the pedunculate paniculate cymes axillary, clustered at the ends of the branches, 2 dm. or less in length: calyx small, 2.5 mm. long, subbilabiate, rather acutely 5-toothed, externally pubescent: corolla irregular, bilabiate, about 9 mm. long; tube erect, 5 mm. high, narrowly funnel-form; the two posterior corolla-lobes small, subrotund, 2 mm. long and broad, reflexed; the lower lip or three anterior lobes of the corolla spreading, 5 to 6 mm. long, the median lobe slightly pulverulent on the upper surface near its base: stamens 4, didynamous, exserted; filaments narrow, slightly

pubescent: style about equalling the two longer stamens: fruit depressed-globose, 1.5 cm. in diameter in the dried state.— *Vitex pyramidata* Millsp. Field Col. Mus. Bot. Ser. i. 317 (1896), not Rob.— MEXICO. State of Yucatan: vicinity of Izamal, March-April, 1895, *Dr. Geo. F. Gaumer*, no. 607, flowering specimen, (hb. Field Mus., and hb. Gray), type; near Izamal, coll. of 1888, *Dr. Geo. F. Gaumer*, flowering specimen, without number (hb. Field Mus., and hb. Kew); vicinity of Merida, June, 1865, *Dr. A. Schott*, no. 582, fruiting specimen, (hb. Field Mus.).

The species here described is nearly related to *V. pyramidata* Rob. with which it has been confused, but from which it differs in being a tree instead of a shrub, in having longer petiolules which, as well as the petioles themselves, are velvety pubescent instead of pulverulent, in having a paler lower leaf-surface, smaller flowers, in the absence of villous hairs at the base of the anterior lip of the corolla on its upper surface, and finally in having a more pubescent and somewhat more sharply dentate calyx. Dr. George F. Gaumer in whose honor the above species is named states that the plant here described is a tree growing in the forests about Izamal, where it attains a height of about 15 meters. The flowers, moreover, are said by Dr. Gaumer to be bright purple. The tree passes under the native Mayan name of "Yaxnic."

SCUTELLARIA AUREA Rob. & Greenm. Am. Journ. Sci. l. 163 (1895).

Specimens well representing this species were collected on the Cerro San Antonio, Oaxaca, Mexico, altitude 1,800 m., 28 October, 1906, *C. Conzatti*, no. 1583 (hb. Field Mus.).

Var. **Conzattii** Greenman, var. nov.

Stem erect or ascending: leaves petiolate, ovate to ovate-lanceolate, 2 to 7 cm. long, 1 to 3 cm. broad, acuminate, acute, entire; petioles 1.5 cm. or less in length: other characters as in the species.— MEXICO. State of Oaxaca: Cerro San Antonio, altitude 1,800 m., 28 October, 1906, *C. Conzatti*, no. 1584 (hb. Field Mus.). The variety differs from typical forms of the species in having smaller and perfectly entire leaves.

Bacopa procumbens,* n. comb. *Erinus procumbens* Mill. Gard. Dict. ed. 8, no. 6 (1768) & ed. 9, no. 13 (1797). *Lindernia dianthera* Sw. Prodr. Veg. Ind. Occ. 92 (1788); Mill. Gard. Dict. ed. 9, no. 2 (1797); Willd. Sp. Pl. iii. 326 (1800). *Herpestis chamædryoides* HBK. Nov. Gen. & Sp. ii. 369 (1817); Benth. in DC. Prodr. x. 393 (1846); Gray, Syn. Fl. ii. part I. 280 (1878); Hemsl. Biol. Cent.-Am. Bot. ii. 451 (1882). *Microcarpæa americana* Spreng. Syst. i. 42 (1825). *Monniera procumbens* O. Kuntze, Rev. Gen. Pl. ii. 463 (1891). *Bacopa chamædryoides* Wettst.

*The strict use of the earlier specific name requires the restoration of Miller's *procumbens* for this well known plant which has long passed under the name of *Herpestis chamaedryoides* HBK.; and in accordance with the International Rules of Botanical Nomenclature, in adopting *Bacopa* of Aublet for this group of plants, it becomes necessary to transfer the two species following.

in Engl. & Prantl. Nat. Pflanzenf. iv. Ab 3^b. 76 (1895). *Monniera dianthera* Millsp. Field Col. Mus. Bot. Ser. ii. 98 (1900), as to binomial and synonomy, not as to specimen cited. *Mecardonia procumbens* Small, Fl. Southeastern U. S. 1065 (1903).

Var. **Schottii,** var. nov.

Habit and foliar characters as in the species: pedicels slender, varying in length from somewhat shorter to twice the length of the leaves: flowers 6 to 7 mm. long in anthesis; the outer upper sepal sharply denticulate.— MEXICO. State of Yucatan: Merida, 29 August, 1865, *Dr. A. Schott*, no. 616 (hb. Field Mus.); vicinity of Izamal, collection of 1888, *Dr. Geo. F. Gaumer*, specimen without number (hb. Field Mus.); Izamal, collection of 1895, *Dr. Geo. F. Gaumer*, no. 474 (hb. Field Mus., and hb. Gray); in moist places near Izamal, 22 February, 1906, *J. M. Greenman*, no. 464 (hb. Field Mus.); San Anselmo, *Dr. Geo. F. Gaumer*, no. 1792 (hb. Field Mus.); Chichen Itza, 28 January to 10 February, 1901, *E. A. Goldman*, no. 555 (hb. U. S. Nat. Mus., and hb. Field Mus.). Differs from typical representatives of the species in the somewhat smaller flowers, slightly narrower parts of the calyx, and in the rather striking denticulate character of the outer upper sepal.

B. auriculata, n. comb. *Herpestis auriculata*, Rob. Proc. Am. Acad. xxvi. 172 (1891).

B. decumbens, n. comb. *Herpestis decumbens*, Fernald. Proc. Am. Acad. xxxiii. 91 (1897).

JUSTICIA FURCATA Jacq., var. **terminalis,** n. comb. *Adhatoda furcata*, *α terminalis* Nees in DC. Prodr. xi. 398 (1847).

In Mr. Pringle's *Plantae Mexicanae* two different numbers, namely no. 6498 and 11665, have been distributed under the above name, but no authority assigned to the combination. Definite mention of the variety *terminalis* under the genus *Justicia* with complete reference to synonomy seems not to have been made hitherto. To this variety may also be referred specimens collected at El Parián, District of Etla, Oaxaca, Mexico, altitude 1,400 m., 2 September, 1906, *C. Conzatti*, no. 1556 (hb. Field Mus.).

JACOBINEA VIRGATA Hemsley. Biol. Cent.-Am. Bot. ii. 522 (1882). *Drejera virgata* Oerstd. in Kjoeb. Vidensk. Meddel. 1854, p. 154; Walp. Ann. v. 660.

Specimens collected at De Almoloyas á Sta. Catarina, Oaxaca, Mexico, altitude 1,000 m., 26 December, 1906, *C. Conzatti*, no. 1662 (hb. Field Mus.), agree well with the original description of the above species.

Morinda yucatanensis Greenman, sp nov.

A more or less climbing shrub: stem and older branches covered with a grayish bark; the younger branches and branchlets yellowish and densely pubescent with short horizontally spread-

ing hairs: leaves petiolate, lanceolate to elliptic-lanceolate, occasionally ovate, 5 to 12 cm. long, 1 to 5 cm. broad, acuminate, acute, entire, gradually narrowed below to a 2 - 10-mm. long petiole, pubescent on both surfaces more densely so beneath; interpetiolar stipules 1 to 4 mm. high, abruptly apiculate-acuminate or occasionally bidentate: inflorescence in spherical sessile or subsessile axillary pubescent heads: flowers numerous, united to the inconspicuous truncate calyx-limb: corolla tubular or tubular-funnel-form, about 7 mm. long, rather deeply 5-lobed, pubescent on the outer surface, glabrous in the lower portion of the tube within, pubescent above: stamens and style of two lengths, reciprocally exserted or included: fruit somewhat succulent, spherical, about 1.5 cm. in diameter; pyrenae obliquely oblong-obovate, 6 mm. long, 3 to 4 mm. broad, smooth or nearly so.— *M. Roioc* Millsp. Field Col. Mus. Bot. Ser. i. 321 (1896) & in Engl. Bot. Jahrb. xxxvi. Beibl. 80: 28 (1905), not L. *M. Royoc* Millsp. Field Col. Mus. Bot. Ser. l. c. 392 (1898), not L.— Mexico. State of Yucatan: Nojcacab, 21 November, 1865, *Dr. A. Schott*, no. 709 (hb. Field Mus.); in brush lands about Izamal, collection of 1895, *Dr. Geo. F. Gaumer*, no. 362 (hb. Field Mus., and hb. Gray), type; near Merida, *Sr. Porfirio Valdez*, no. 67 (hb. Field Mus.); Chichankanab, *Dr. Geo. F. Gaumer*, no. 1700 (hb. Field Mus.); Chichen Itzá, 28 January to 10 February, 1901, *E. A. Goldman*, no. 547 (hb. U. S. Nat. Mus., and hb. Field Mus.); Titas, 17 March, 1903, *C. & E. Seler*, no. 3971 (hb. Field Mus.); in forests near Xkombec, 5 April, 1903, *C. & E. Seler*, no 4032 (hb. Field Mus.); near Izamal, 22 February, 1906, *J. M. Greenman*, nos. 421, 471 (hb. Field Mus.).

This species has been referred hitherto to *M. Royoc* L., but it may be readily separated by the persistent pubescence over the entire plant, the sessile or subsessile inflorescence and fruit slightly shorter corolla, somewhat more complete union of the flowers, and by the slightly longer and more oblique pyrenae. The plant is known in Yucatan under the Mayan name of "Joyoc" (Hoyoc).

Crusea violacea A. Brongn., acc. to Neumann, in Rev. Hortic. Sér. II. iv. 368 (1846); v. 61, pl. 30, fig. 4 (1846).

The following specimens agree in every essential detail with the descriptions and illustration of the above little-known species, and for the present at least they seem best placed here. — Mexico. State of Vera Cruz: Teocelo, 8 May, 1901, *E. A. Goldman*, no. 685 (hb. Field Mus., and hb. U. S. Nat. Mus.); meadows, Orizaba, May, 1905, *C. A. Purpus*, no. 447 (hb. Field Mus.), distributed as "*Spermacoce rubra* Ch. & Schl."; along the railroad near Cordoba, 25 January, 1906, *J. M. Greenman*, nos. 188, 209 (hb. Field Mus.); railroad banks near Jalapa, *C. R. Barnes, C. J. Chamberlain & W. J. G. Land*, no. 16 (hb. Field Mus., and hb. University of Chicago).

Professor William Trelease has kindly furnished me with a copy

of the original descriptions and a photograph of the illustration of the above species from the Revue Horticole.

I am indebted, moreover, to Dr. Casimir DeCandolle who has kindly made for me a critical comparison of my no. 209 with *Crusea calocephala* DC. in the Prodromus herbarium. From Dr. DeCandolle's letter I quote the following:— "I have compared the *Crusea* specimens you sent me with that of *C. calocephala* in the Prodromus herbarium. The case of that species is unfortunately not quite clear as you will see by the following: *C. calocephala* DC. is represented in the herbarium by Mocino's plate n. 497 (an original plate, by the way, and not a tracing), together with Dunant's specimen from Peru. Now it happens that these two documents do not seem to belong to the same species, for the plate (of which I sent you yesterday a good tracing, in a separate roller) shows penninerved leaves, whilst in Dunant's specimen the leaves have the same nervation as in your specimen. Now on the other hand Dunant's specimen differs from yours — 1st by the shape of its involucral leaves which are more attenuate at the base; 2d by its calyx being *densely* pubescent from its base upwards, whilst in your specimens it is much less pubescent and mostly on its upper part only. Consequently I consider your specimens as specifically distinct from both Mocino's plate and Dunant's specimen.

Moreover I must also draw your attention to the fact that in Mocino's plate, the corolla is coloured in red (which please inscribe on the tracing when it reaches you) whilst your plant seems to have blue flowers. As for *C. rubra* Cham. & Schlecht. it is also certainly distinct from your plant, as it has much shorter and strigose hairs and longer petioles."

Both *C. calocephala* DC. and *C. rubra* Cham. & Schlecht. are somewhat confused, and very little is known about *C. violacea* Brongn. In fact the entire genus *Crusea*, as well as *Spermacoce*, needs a careful revision, which, however, can only be done satisfactorily after a critical comparison of the ample material of our recent collections with types existing only in European herbaria.

LOBELIA REGALIS Fernald, Proc. Am. Acad. xxxvi. 503 (1901).

Excellent specimens of this species were collected at Ejutla, State of Oaxaca, Mexico, altitude 1,300 m., 12 December, 1906, *C. Conzatti*, no. 1638 (hb. Field Mus.). This collection records another station for one of the most beautiful species of the genus, and one which is well worthy of introducing into cultivation.

OAXACANIA MALVAEFOLIA Rob. & Greenm. Am. Journ. Sci. l. 151 (1895).

This interesting monotype has been found at De Almoloyas á Sta. Catarina, Oaxaca, Mexico, at an altitude of 1,000 m., 26 December, 1906, *C. Conzatti*, no. 1654 (hb. Field Mus.). The only other recorded locality for this species is that cited under the original description, namely Tomellin Cañon, Oaxaca, where it was secured by Mr. C. G. Pringle in 1894.

Brickellia Kellermanii Greenman, sp. nov.

Stem erect, nearly 1 m. in height, lignescent at the base, terete, tomentulose: lower leaves opposite, the upper alternate, short-petiolate, oblong-lanceolate, 3 to 6 cm. long, 1 to 2 cm. broad, obtuse or acute, crenate-dentate to entire, subhirtellous above, paler and whitish-tomentulose beneath, rather strongly reticulate-nerved; petioles about 0.5 cm. long: inflorescence a subcorymbose rather leafy panicle: heads many, sessile or nearly so, 12 to 14 mm. high, usually 12-flowered: involucre narrowly campanulate or subcylindric; bracts of the involucre about 7-seriate, strongly unequal, imbricated, sparingly pubescent, ciliate, striate, pale with greenish nerves, or purplish; the outer bracts ovate-oblong, mucronate, strongly ciliate, the inner lance-linear, acute: flowers somewhat exceeding the involucre: pappus silvery white, 6 mm. long, about as long as the white or purplish-tinged corolla: achenes 3 mm. long, pubescent.— Guatemala. Department of Baha Vera Paz: Sierra de las Minas, altitude 1,158 m., 3 March, 1907, *W. A. Kellerman*, no. 6127 (hb. Field Mus.).

In leaf-outline *B. Kellermanii* resembles *B. cylindrica* and *B. Pringlei* Gray, but it is amply distinct from both these species in the nature of the inflorescence, tomentum, and in the technical characters of the head.

Egletes viscosa Less. Syn. Comp. 252 (1832). *Cotula viscosa* L. Sp. Pl. 892 (1753); Willd. Sp. Pl. iii. 2167 (1800).

This species was based on material collected by Houston in the region of Vera Cruz, Mexico. Specimens obtained at La Purga, 31 kilometers southwest of the City of Vera Cruz, 27 January, 1906, *J. M. Greenman*, no. 257 (hb. Field Mus.), agree well with the early although brief descriptions of the above species, and are confidently referred to it. The species is of rather wide distribution, occurring in southern Mexico, the West Indies and, according to Hemsley, in South America; it is, moreover, well characterized by its viscid-hirsute character and somewhat lyrate or pinnately incised foliage, suggesting vigorous forms of *Senecio viscosus* L.

In 1890 and again in 1892 Mr. C. G. Pringle collected on river banks at Las Palmas, Mexico, an *Egletes* which was referred to *E. viscosa* Less. The latter of the two collections made by Mr. Pringle was distributed by clerical error as "*Egletes viscida* Less." Mr. Pringle's specimens differ in several particulars from Lessing's species. Moreover, they do not correspond to any known species of the genus, hence they may be characterized as follows:

Egletes Pringlei Greenman, sp. nov.

Annual: stem erect or essentially so, simple or branched from near the base, somewhat geniculate above, viscid-hirsute: leaves ovate to more or less obovate, 1.5 to 7.5 cm. long, one-half to two-thirds as broad, thin or membranous, rather coarsely

and unequally sinuate-dentate, contracted below into a narrowly winged petiole and subamplexicaul by a slightly auricular base: inflorescence terminating the stem and branches in a paniculate cyme: heads 4 to 5 mm. high, radiate: ray-flowers many-seriate; corollas minute, 1.5 to 2 mm. long, less than 0.5 mm. broad: disk-flowers numerous; corollas about 1 mm. long, 4–5-toothed; tube on the outer surface glandular-pilose: achenes slightly compressed, produced above into a somewhat irregular saucer-shaped subcartilaginous pappus.— MEXICO. State of San Luis Potosi: river banks, Las Palmas, 4 June, 1890, *C. G. Pringle*, no. 3531 (hb. Field Mus.); and in the same locality, 18 June, 1892, *C. G. Pringle*, no. 4101 (hb. Field Mus.).

E. Pringlei is readily distinguished from *E. viscosa* Less. by the ovate or obovate undivided leaves, the more numerous heads, shorter hairs on stem and branches, and finally by the smaller narrower rays, the more conspicuously flaring pappus, and the less conical receptacle.

Erigeron pacayensis Greenman, sp. nov.

Suffruticose: stems erect or ascending, branched, 1 to 1.5 dm. high, pubescent with upwardly appressed or but slightly spreading hairs: leaves narrowly linear-oblanceolate, 1 to 2 cm. long, 1 to 3 mm. broad, acute or obtusish, entire or bearing a single tooth on one or both margins, gradually narrowed below to a subpetiolate base, sparingly pubescent on either surface to nearly glabrous: heads few, small, 5 to 6 mm. high, less than 1 cm. in diameter including the rays, terminating the stem and branches on long slender appressed-pubescent peduncles 6 cm. or less in length: involucre subcampanulate; bracts of the involucre about 3-seriate, unequal, lance-linear, acute, appressed-pubescent, more or less purplish; the outer bracts shorter: ray-flowers 3-seriate, many; rays narrow, white or roseate: flowers of the disk numerous: pappus bristles slender, 2 to 2.5 mm. long: achenes pubescent.— GUATEMALA. Department of Amatitlan: crater of the Volcano of Pacaya, altitude 2,500 m., 6 January, 1907, *W. A. Kellerman*, no. 6111 (hb. Field Mus., and hb. Gray).

The species here proposed has its affinity with *Erigeron Ervendbergii* Gray, and **E. irazuensis* Greenman. From the former it differs in having smaller heads, appressed instead of spreading hairs on the involucre, more unequal involucral bracts, etc. Although similar in habit to *E. irazuensis*, yet it differs in several particulars, namely in having narrower and less pubescent leaves, also in the appressed pubescence on the stem and peduncles, as well as in other details.

I am indebted to Mr. H. H. Bartlett of the Gray Herbarium for a critical comparison of Professor Kellerman's plant with the type of *E. irazuensis*.

* By oversight published as *Erigeron irazuense*.

Baccharis Kellermanii Greenman, sp. nov.

Stem terete, sulcate, hirtellous-puberulent with crisp sordid hairs: leaves elliptic-lanceolate to oblanceolate, 1 to 3.5 cm. long, 2 to 8 mm. broad, acute or obtuse, sharply dentate with unequal and somewhat spreading teeth, narrowed at the base into a short petiole, at first slightly puberulent above but soon becoming glabrous, persistently hirtellous-pubescent beneath, subtrinervate and rather prominently reticulate-veined: inflorescence a terminal subcorymbose cyme: heads of the pistillate plant numerous, 6 to 7 mm. high: involucre subcampanulate; bracts of the involucre unequal, 4-5-seriate, linear-ob-long, obtuse or rounded at the tip, more or less purplish on the back and ciliate towards the apex, the outermost shortest: flowers 18 to 24; pappus about 4 mm. long, slightly tawny, exceeding the slender corolla-tube: mature achenes 1.5 mm. long, glabrous: staminate plant not seen.— Guatemala. Department of Solala: Volcano of Atitlan, 16 February, 1906, *W. A. Kellerman*, no. 5356 (hb. Field Mus.). In leaf-outline *Baccharis Kellermanii* suggests *B. thesioides* HBK., but the two species are amply distinct in habit, inflorescence, involucral details, and in the character of the surface of stem and leaves.

Gnaphalium brachyphyllum Greenman, sp. nov.

An herbaceous perennial, lanate-tomentose throughout: stems several, erect or nearly so, from a ligneous base, 1 to 2 dm. high, slender, leafy: leaves linear-oblong or slightly oblanceolate, 0.5 to 1.5 cm. long, 1 to 4 mm. broad, obtuse, entire, slightly repand-margined, sessile and semiamplexicaul, densely lanate-tomentose on both surfaces: inflorescence terminating the stems in rather dense cymes: heads 4 to 5 mm. high: involucre subcampanulate, tomentose at the base otherwise essentially glabrous; bracts of the involucre 3-4-seriate, pale stramineous, the outer ovate and about 3 mm. long, the inner linear-lanceolate, 3.5 to 4 mm. long, greenish at the base especially along the median line: pistillate flowers numerous: perfect flowers 6 to 10: pappus caducous: achenes glabrous, 1 mm. long, reddish.— Guatemala. Department of Quezaltenango: Cerro Quemada, 8 February, 1906, *W. A. Kellerman*, no. 5301 (hb. Field Mus.). The numerous slender stems and short crowded leaves render this species readily recognizable among all the other known species of the genus.

Melampodium Kunthianum DC. Prodr. v. 519 (1836); Hemsl. Biol. Cent.-Am. Bot. ii. 146 (1881); Rob. Proc. Am. Acad. xxxvi. 460 (1901).

To this little known species the writer refers specimens collected on hillsides near Chavarillo, State of Vera Cruz, Mexico, 7 September, 1906, *C. R. Barnes, C. J. Chamberlain & W. J. G. Land*, no. 8 (hb. Field Mus., and hb. University of Chicago). In all essential characters these specimens agree with descriptions of the above species. The leaves in our material, however, are

either linear or 3-parted with linear divisions instead of lanceolate-linear and entire, as indicated in the original characterization.

Gymnolomia scaberrima Greenman, n. comb. *G. platylepis* Gray, Proc. Am. Acad. xix. 5 (1883); Rob. & Greenm. Proc. Bos. Soc. Nat. Hist. xxix. 102 (1899), excluding plants of Pittier. *G. decurrens* Klatt, Leopoldina, xxiii. 90 (1887). *Tithonia scaberrima* Benth. in Kjoeb. Vidensk. Meddel. 1852, p. 91 & Gen. Pl. ii. 368; Walp. Ann. v. 223 (1858). *T. platylepis* Schz. Bip., acc. to Benth. & Hook. f. Gen. Pl. ii. 368 (1876). *Mirasolia scaberrima* Benth. & Hook. f. l. c. 375; Hemsl. Biol. Cent.-Am. Bot. ii. 168 (1881). *Perymeniopsis perfoliata* Schz. Bip., acc. to Klatt., l. c.— In addition to the specimens cited under *G. platylepis* Gray by Robinson and Greenman, l. c. (excluding Pittier's nos. 3136, 3735), the following collection may be recorded,— GUATEMALA. Department of Socatepéquez: Volcano Agua, altitude 2440 m., 18 February, 1905, *Prof. W. A. Kellerman*, no. 5361 (hb. Field Mus.).

Following the International Rules of Botanical Nomenclature, adopted by the International Botanical Congress held at Vienna in 1905, it becomes necessary to form the above binomial for this well known south Mexican and Central American species.

Wedelia rugosa Greenman, sp. nov.

An herbaceous perennial: stems erect or nearly so, 5 dm. or more high, simple or branched, subterete, strigose-hispid with upwardly appressed hairs: leaves opposite, short-petiolate, oblong to oblong-lanceolate, 3 to 10 cm. long, 1.5 to 5 cm. broad, acute or obtuse, entire or slightly crenate-dentate, rounded to subcordate at the base, tuberculate-hispid and rugose above, hirsute-hispid and strongly reticulate-nerved beneath; petioles 2 to 5 mm. long: inflorescence terminating the stem and branches in few-headed cymes: heads radiate, 5 to 8 mm. high, including the rays 10 to 16 mm. in diameter; peduncles 0.5 to 4 cm. long, strigose-hispid: involucre campanulate; bracts of the involucre biseriate, oblong to elliptic-ovate, 3 to 4 mm. long, 1 to 1.5 mm. broad, obtuse or acute, externally appressed-pubescent: ray-flowers 12 to 14, fertile; rays yellow, about 6 mm. long, 2.5 mm. broad, 2-3-dentate; achenes 3-angled: disk-flowers numerous; achenes at first laterally compressed, densely atomiferous-glandular over the upper one-third, glabrous below, at maturity oblong, 2.5 mm. long and subquadrangular in cross-section: pappus of both ray- and disk-flowers a fimbriate crown of 2 (-3) small scales at the angles of the achene with minute more or less coalescent intermediate scales: pales of the receptacle rather conspicuous, more or less uncinate-tipped especially in the mature state.— *Wedelia reticulata* Greenm. in Trans. Acad. Sci. St. Louis. vii. 434 (1897), not DC.— CUBA. Province of Santa Clara: Abresus, 29 June, 1895, *Robert Combs*, no. 269 (hb. Field Mus.), type. Province of Havana: Managua, 19

July, 1904, *Chas. F. Baker & Percy Wilson*, no. 292 (hb. Field Mus.); Managua, 23 September, 1904, *Carl F. Baker*, no. 1554 (hb. Field Mus.); Madruga, 23 November, 1904, *A. H. Curtiss*, no. 528 (hb. Field Mus.).

Var. **tenuis** Greenman, var. nov.

Similar to the species, but with smaller and more slender stems: leaves 2.5 to 6 cm. long, 0.5 to 2.2 cm. broad.— Cuba. Province of Pinar del Rio: Herradura, 30 September, 1904, *Carl F. Baker*, no. 2154 (hb. Field Mus.); Herradura, 24 August, 1905, *H. A. Van Hermann*, no. 705 (hb. Field Mus.).

The species here described resembles *W. reticulata* DC.; but the oblong or oblong-lanceolate outline of the leaves with their distinctly pinnate venation and entire or slightly crenate margin, the shorter involucral bracts, and the peculiar uncinate-tipped pales amply distinguish it from the De Candolle species.

Perymenium Goldmanii Greenman, sp. nov.

Stem terete or slightly tetragonal, striate, strigillose: leaves opposite, petiolate, ovate-lanceolate, 3 to 8 cm. long, 1 to 4 cm. broad, acuminate, acute, dentate to subentire, rounded to subcordate at the base, scabrous above and becoming slightly rugose in age, hirsutish-pubescent beneath, green on both sides, 3-nerved from near the base; petioles 3 to 10 mm. long; inflorescence terminating the stem and the horizontally spreading or ascending lateral branches in rather dense cymose clusters: heads numerous, small, 6 to 7 mm. high, about 3 mm. in diameter, radiate; primary and secondary peduncles short, usually less than 2 cm. in length, appressed-pubescent; involucre subcampanulate; bracts of the involucre unequal, 2-3-seriate, the outer shorter, ovate to ovate-oblong, 3 to 4.5 mm. long, acute or obtuse, externally strigillose, ciliate: ray-flowers commonly 5; rays lemon-yellow: disk-flowers about 20: pappus of numerous unequal setae: mature achenes laterally compressed or somewhat 3-angled, about 2.5 mm. long, ciliate or narrowly winged, transversely rugose under a lens and slightly pubescent on the surface especially in the upper half.— Mexico. State of Campeche: Apazote, near Yohaltun, 27 to 29 December, 1900, *E. A. Goldman*, nos. 487, 502 (hb. U. S. Nat. Mus., and hb. Field Mus.).

The affinity of the species here described is with *P. microcephalum* Schz. Bip., and *P. gracile* Hemsl., but it differs from the former by the larger leaves and from the latter in foliar and achenial characters. The narrowly winged achenes of *P. Goldmanii* suggest *P. gymnolomoides* DC., but that species has smaller leaves, shorter petioles and fewer heads in the inflorescence.

Notoptera Gaumeri, n. comb. *Salmea Gaumeri* Greenm. in Field Col. Mus. Bot. Ser. iii. 124 (1904).

The homogamous heads, the short accumbent involucre, the characteristic ear-like wing on the posterior pappus-awn,

and the habit of the plant render it a congener of Professor Urban's recently published genus *Notoptera*, Symb. Antil. ii. 465 (1901). In addition to Dr. Gaumer's no. 977, cited in the original publication of the above species, the following is typical. — MEXICO. State of Campeche: Apazote, near Yohaltun, 26 December, 1900, *E. A. Goldman*, no. 483 (hb. U. S. Nat. Mus., and hb. Field Mus.).

ENCELIA ADENOPHORA Greenm. Proc. Am. Acad. xxxix. 109 (1903). In addition to the stations recorded for this species under the original description is the following: Hacienda Guadalupe, State of Oaxaca, Mexico, altitude 1600 m., 7 October, 1906, *C. Conzatti*, no. 1529 (hb. Field Mus.).

OTOPAPPUS VERBESINOIDES Benth. in Hook. Ic. Pl. xii. 47, t. 1153 (1876); Hemsl. Biol. Cent.-Am. Bot. ii. 192 (1881).

A careful examination of a considerable number of specimens representing this species shows a marked variation in the form and size of the outer spreading subfoliaceous involucral bracts. These vary from spatulate to lanceolate or linear and from 3 to 12 mm. in length. There is also some diversity in the size of the rays. The following specimens are here referred.— MEXICO. State of Vera Cruz: Canton de Cordoba, altitude 1200 m., 25 December, 1897, *C. Conzatti & V. González*, no. 622 (hb. Gray). State of Chiapas: near Yajalon, 21 November, 1895, *E. W. Nelson*, no. 3409 (hb. Gray); Palenque, collection of 1895, *A. V. Armour*, no. 7 (hb. Field Mus.). State of Campeche: Apazote, near Yohaltun, 26 December, 1900, *E. A. Goldman*, no. 482 (hb. U. S. Nat. Mus.; fragment in hb. Field Mus.). GUATEMALA. Department of Alta Vera Paz: altitude 1310 m., June, 1882, *H. von Tuerckheim*, without number (hb. Gray); Pansamalá, altitude 1158 m., January, 1887, *H. von Tuerckheim*, no. 1110 (hb. Gray). Depart. of Santa Rosa: Rio Chiquito, altitude 700 m. September, 1893, *Heyde & Lux*, no. 6174 (hb. Gray, and hb. Field Mus.), an extreme form with narrow elongated outer involucral bracts. COSTA RICA: Turrialba, altitude 570 m., November, 1893, *Ad. Tonduz*, no. 8337 (hb. Gray); San José, altitude 635 m., December, 1898, *Ad. Tonduz*, no. 12,739 (hb. Gray). Thus the species, as known at the present time, has a geographical distribution ranging from the State of Vera Cruz, Mexico, to Costa Rica.

Goldmania Greenman, gen. nov. of *Compositæ* (*Coreopsideæ*).

Heads heterogamous, radiate. Involucre campanulate; bracts 3-4-seriate, free. Receptacle conical, paleaceous; pales thin, membranous. Ray-flowers uniseriate, fertile: achenes compressed dorsally. Disk-flowers regular; corolla-tube short, gradually ampliated above into a 5-toothed limb; achenes more or less dorsally compressed. Anthers slightly sagittate at the base, terminated by a short appendage. Style-branches elongated, acute. Pappus of 2 to 4 short thick awns, or subcoroni-

form. Herbaceous perennials with alternate undivided leaves and few-headed cymose inflorescence.

G. sarmentosa Greenman, sp. nov.

Stem prostrate or ascending, rooting at the lower nodes, terete, glabrous below, slightly pubescent above: leaves sessile, or the lowermost short-petiolate, ovate, 3 to 6 cm. long, two-thirds as broad, acute or mucronate-acute, somewhat oblique or unsymmetrical at the base, at first pubescent with a few scattered hairs on both surfaces, soon glabrate: inflorescence terminating the stem and branches in few-headed cymes: heads pedunculate, including the rays about 1.5 cm. in diameter; peduncles slender, 1 to 7 cm. long, naked or sparingly bracteolate, subappressed-pubescent: involucre 6 to 8 mm. high; bracts glabrous, yellowish with reddish-brown nerves, the outer shorter, ovate and acute, the inner oblong, rounded at the apex and subscarious-margined: ray-flowers 5 to 8; rays oblong or oblong-obovate, about 6 mm. long, 3 to 4 mm. broad, 2-3-dentate, white or pale yellow: disk-flowers about 20: pappus persistent as short thick awns, sometimes subcoronate: mature achenes oblong, 2.5 to 3 mm. long, much thickened, glabrous but with a slightly roughened surface, reddish-brown.— Mexico. State of Campeche: Canasayal, 12.5 km. above Champotan river, 12 December, 1900, *E. A. Goldman*, no. 448 (hb. U. S. Nat. Mus., and hb. Field Mus.). The plant here described in the appearance of the involucre suggests some of the *Galinsogeæ*, particularly *Calea* and *Geissolepis*, and certain of the *Helenioideæ*, especially *Jaumea*. The paleaceous receptacle, the dorsally appressed achenes, and the character of the pappus place it, however, with the *Coreopsideæ*.

The genus is named in honor of its collector Mr. Edward A. Goldman of the United States National Museum.

Bidens Urbanii Greenman, sp. nov.

Perennial: stem ligneous, twining; branches terete, minutely striate, glabrous, or puberulent in decussating lines: leaves opposite, petiolate, triangular-ovate in general outline, exclusive of the petiole 3 to 7 cm. long, 2 to 6 cm. broad, bi-tri-pinnatisect with narrowly lanceolate acute submucronate-dentate divisions, glabrous to minutely and sparingly hispidulous on the upper surface, paler and glabrous or essentially so beneath; petioles slender, 0.5 to 3.5 cm. long: inflorescence in terminal more or less leafy paniculate cymes; the individual axillary pedunculate cymes exceeding the leaves: heads radiate, during anthesis 8 to 10 mm. high, including the rays 2 to 2.5 cm. in diameter: involucre biseriate; the outer bracts of the involucre herbaceous, lance-linear to narrowly spatulate, acute or obtusish, reflexed, glabrous or slightly puberulent; inner involucral bracts thin, dark brown or chocolate-colored with yellowish subscarious margins: ray-flowers usually 5, sterile; rays narrowly oblong, about 1 cm. long, obtuse or retuse, pale yellow, about 7-nerved

with dark brown or blackish nerves: disk-flowers 20 to 25: mature achenes of the fertile flowers linear, 12 mm. or less in length, erect or somewhat recurved, 2-4-awned with relatively short retrorsely barbed persistent pappus-awns, striate, 2-4-angled in cross-section, ciliate along the angles otherwise glabrous. — PORTO RICO. On slopes of Mt. Montoso, near Maricao, 23 November, 1884. *Sintenis*, no. 387 (hb. Field Mus. Catalogue No. 79397), type. MEXICO. State of Campeche: Apazote, near Yohaltun, 20 December, 1900, *E. A. Goldman*, no. 468 (hb. U. S. Nat. Mus.; fragment and photograph in hb. Field Mus.).

This species has its affinity with a small natural group of plants to which *B. rubifolia* HBK, *B. tereticaulis* and *B. coreopsidis* DC. belong, but the smooth or lineate-puberulent stem and branches, the pinnatisect leaves with their numerous narrow divisions, the nature of the pubescence, and certain technical characters of the head seem to the writer to warrant its specific rank. *B. Urbanii* is apparently most closely allied to *B. Coreopsidis, var.* (?) *incisa* DC. v. 599 (1836) (*Coreopsis incisa* Ker-Gawl. Bot. Reg. t. 7), but here again a careful comparison with the original description and illustration shows several important differences.

CALEA PRINGLEI Rob., var. **rubida** Greenman, var. nov.

Leaves short-petiolate, ovate, 1.5 to 3 cm. long, two-thirds as broad, densely tomentose beneath; petioles 2 to 4 mm. long, tawny-pubescent: involucral bracts elliptic-oblong, reddish-margined.— MEXICO. State of Vera Cruz: on hillsides near Chavarillo, 7 September, 1906, *C. R. Barnes, C. J. Chamberlain & W. J. G. Land*, no. 4 (hb. Field Mus., and hb. University of Chicago). Differs from the type of the species chiefly in the short but distinctly petioled leaves, and by the slightly narrower and reddish-margined involucral bracts.

Florestina Liebmannii Schz. Bip., in herb.

Stem erect or somewhat ascending from an indurated base, 3 to 5 dm. high, simple or sparingly branched, terete below, striate-angled above, substrigillose and more or less closely beset with stipitate glands: lower leaves opposite, simple, petiolate, narrowly lanceolate-oblong, 2 to 3.5 cm. long, 4 to 12 mm. broad, obtuse or acute, entire or occasionally few-dentate, obtuse at the base, substrigose-hispid on both surfaces, 3-nerved; petioles 0.5 to 1.5 cm. long, hispid-pubescent intermixed with stipitate-glandular hairs; the upper stem-leaves alternate and gradually reduced to linear bracts: inflorescence terminating the stem in a glandular-pubescent subcorymbose cyme: heads homogamous, 8 to 10 mm. high: involucre subturbinate; bracts of the involucre 8, uniseriate or essentially so, elliptic-oblong to obovate-oblong, 4 to 5 mm. long, 2 to 3 mm. broad, rounded at the apex, scarious-margined and more or less erose-ciliate, appressed-puberulent on the outer surface: flowers 12 to 14: pappus of 8 obovate or broadly spatulate hyaline-scarious pointless

scales, these about 1.5 mm. long and narrowed below into a thickened opaque base: corolla 4 mm. long, deeply 5-toothed, externally somewhat pubescent: achenes narrowly obpyramidal, 3 to 4 mm. long, 4-5-angled, striate, pubescent.— Mexico. State of Vera Cruz: Boca del Rio, *Liebmann*, no. 71 (hb. Copenhagen, fragment and good drawing in hb. Gray, photograph in hb. Field Mus.); along the shore, north of the City of Vera Cruz, 24 January, 1906, *J. M. Greenman*, no. 114 (hb. Field Mus., and hb. Gray).

The general habit and simple leaves of this species suggest a relationship with *Palafoxia* or *Polypteris*, but the technical characters of the involucre, pappus, corolla and style-branches place it rather with *Florestina*. The affinity of the plant, as well as its specific rank, was first recognized by Schultz Bipontinus, and subsequently by the late Professor F. W. Klatt, but the name seems not to have been hitherto published.

I am indebted to Professor Eug. Warming for the identification of my no. 114 with the Liebmann plant in the Botanical Museum at Copenhagen.

Tagetes jaliscensis Greenm., var **minor** Greenman, var. nov.

Leaves 3 cm. or less in length, about two-thirds as broad: heads 1.3 to 1.8 cm. high; involucre 1 to 1.4 cm. long: mature achenes 7 to 7.5 mm. in length.— Mexico. State of Oaxaca: Cercainas de Oaxaca, altitude 1550 m., 8 November, 1906, *C. Conzatti*, no. 1516 (hb. Field Mus.). The chief distinguishing characters separating var. *minor* from the species are the smaller leaves, shorter involucre and flowers.

Dysodia (§**Gymnolæna**) **oaxacana** Greenman, sp. nov.

Shrub: stem and branches covered with a grayish bark; ultimate branchlets terete, somewhat striate, greenish or reddish-brown, minutely pubescent in decussating lines: leaves opposite, sessile or essentially so, lanceolate, 1 to 4 cm. long, 4 to 11 mm. broad, acute, finely serrulate, narrowed below to an entire or occasional subsetiferous subpetiolate base, pellucid-punctate, slightly pubescent on both surfaces under a lens especially on the midrib of the upper surface, or glabrous: heads few, heterogamous, 1.5 to 2 cm. high, terminating the stem and branches on minutely bracteate 1.5-5 cm.-long glabrous peduncles: involucre at first narrowly campanulate or subcylindric, often split on one side, 12 to 14 mm. long, (7-) 8-dentate, naked or essentially so at the base, glabrous, bearing several linear-elliptic glands, later separating into more or less distinct lance-linear bracts; teeth, or the terminal portion of the individual bracts, short, triangular, acute, pubescent-tipped: ray-flowers commonly 8; rays including the slender tubular portion 1.5 cm. long, 4 to 5 mm. broad, deep orange-red: disk-flowers about 30: pappus of numerous lacerate-fimbriate scales, tawny: achenes 6 mm. long, pubescent.— Mexico. State of Oaxaca: Almoloyas,

altitude 800 m., 25 December, 1906, *C. Conzatti*, no. 1653 (hb. Field Mus. Catalogue no. 195851; fragment in hb. De Candolle).

I am indebted to Dr. Casimir De Candolle for a detailed comparison of Professor Conzatti's plant with the type of *Dysodia serratifolia* DC. From this species, as pointed out by Dr. De Candolle, *D. oaxacana* differs in having smaller leaves, few heads instead of a multiflorous corymb, and pubescent-tipped involucral bracts.

To this natural group also belong *D. integrifolia* Gray, and *D. Seleri* Rob. & Greenm. From the former the species described above is readily separated by the pubescent branchlets and puberulent leaves; and from the latter by the presence of pellucid glands on leaves and involucre.

CHRYSACTINIA MEXICANA Gray, Pl. Fendl. 93 (1849). *Pectis taxifolia* Greene. Leaflets Bot. Obs. & Crit. i. 148 (1905).

Specimens collected at Kingston, New Mexico, by Mr. O. B. Metcalfe, and distributed under no. 1440 (hb. Field Mus.), as "*Pectis taxifolia*, Greene, n. sp." are identical with the above species of *Chrysactinia*.

LIABUM CADUCIFOLIUM Rob. & Bart. Proc. Am. Acad. xliii. 59 (1907).

To this very distinct species must be referred specimens collected at Paso del Rio, State of Colima, Mexico, November, 1906, *Dr. G. M. Emrick*, no. 187 (hb. Field Mus.). Dr. Emrick's specimens show the uppermost leaves to be ovate, acuminate, acute, entire or remotely mucronate-denticulate and abruptly narrowed below the middle to an acute base. The mature achenes, moreover, are 4 mm. in length, pubescent and strongly striate.

Schistocarpha platyphylla Greenman, sp. nov.

Stem terete, striate, glabrous or slightly pubescent above: leaves opposite, petiolate, ovate, 10 to 25 cm. long, 6.5 to 22 cm. broad, acuminate, acute, sinuate-dentate, subcordate to cuneate at the base and decurrent on the subconnate petioles, 3-nerved, sparingly pilose on both surfaces, slightly paler beneath, thin and membranous: inflorescence a terminal subcorymbose many-headed pubescent panicle; bracts linear, subsetaceous: heads 7 to 8 mm. high: involucre narrowly campanulate; bracts of the involucre 3-seriate, lance-oblong, 3 to 5 mm. long, 1 to 1.5 mm. broad, obtuse or obtusish, pale stramineous, striate, glabrous: pales hyaline, subcuneate, about 3 mm. long, irregularly 3-5-toothed: pistillate flowers usually 13; corollas tubular; tube 2 mm. long, externally pubescent: perfect flowers 14 to 18; corollas about 5 mm. long, slightly exceeding the pappus; tube puberulent, gradually ampliated above into a 5-toothed limb: mature achenes 1 mm. long, glabrous or sparingly puberulent under a strong lens.— GUATEMALA. Department of Quezaltenango: Santa Maria, 5 February, 1906, *W. A. Kellerman*, no.

5295 (hb. Field Mus.), type; south side of the volcano of Santa Maria, altitude 1370 m., 19 January, 1907, *W. A. Kellerman*, no. 6114 (hb. Field Mus.). The affinity of this species is with *Schistocarpha paniculata* Klatt, from which, however, it differs in having a more sparse tomentum on stem and foliage, larger leaves, smaller heads with fewer flowers, and also in the shorter broader pales.

Senecio (§Eremophili) durangensis Greenman, nom. nov. *S. ctenophyllus* Greenm. Proc. Am. Acad. xliii. 20 (1907), not Phil.

Senecio (§ Sanguisorboidei) coahuilensis Greenm.

An herbaceous perennial, glabrous or essentially so throughout: stem erect, 3 to 4 dm. high, branched, striate: leaves pinnatifid, 5 to 10 cm. long, 2 to 3 cm. broad, thickish in texture and slightly glaucous, glabrous on both surfaces or puberulent beneath; segments obtusely crenate-dentate, the terminal segment largest and subreniform, the lateral ones obovate; the lowermost leaves petiolate, the upper stem-leaves sessile and amplexicaul: inflorescence terminating the stem and branches in a compound corymbose cyme: heads about 7 mm. high, radiate: involucre campanulate, calyculate with 2 or 3 small bracteoles, glabrous; bracts of the involucre 13 (-15), linear-lanceolate, 4 to 5 mm. long: ray-flowers 8 to 10; rays oblong, 3 to 4 mm. long, 4-nerved: disk-flowers 35 to 40: achenes glabrous, striate.—Monogr. Senecio, I Th. 23 (1901) & in Engl. Bot. Jahrb. xxxii. 19 (1902), without complete description.— Mexico. State of Coahuila: Lerios, February to October, 1880, *Dr. Edward Palmer*, no. 755 (hb. Gray, and hb. Kew). This species has been confused with *S. Sanguisorbæ* DC., but it is amply distinct in habit, size and foliar characters.

Senecio (§ Sanguisorboidei) Ervendbergii Greenm.

Glabrous throughout: stem herbaceous, leafy, striate: upper stem-leaves thin, membranous, sublyrately pinnatifid, sessile, more or less expanded and subamplexicaul at the base; segments 7 to 9, sublaciniate, the ultimate divisions usually 3-toothed and the teeth tipped by a short mucro; terminal segment obovate-rotund, the lateral oblong or somewhat obovate-oblong; midrib more or less winged throughout and often bearing small tooth-like expansions between the main segments; inflorescence a terminal compound corymbose cyme: heads small about 5 mm. high, on slender pedicels: involucre campanulate, ecalyculate; bracts of the involucre about 21, slightly shorter than the flowers of the disk: ray-flowers 12 to 14: disk-flowers 75 to 80: achenes hispidulous.— Monogr. Senecio, I Th. 23 (1901) & in Engl. Bot. Jahrb. xxxii. 19 (1902) without complete characterization.— Mexico. State of Vera Cruz: Wartemberg, near Tantoyuca, province of Huasteca, October, 1858, *C. L. Ervendberg*, no. 90 (hb. Gray). Nearly related to *S. tampicanus* DC.

Senecio (§ Sanguisorboidei) leonensis Greenm.

An herbaceous perennial, more or less lanate-tomentose throughout, somewhat glabrate in age: stem 2 to 3 dm. high, leafy at the base, essentially naked above: leaves petiolate, pinnatifid, including the petiole 8 to 12 cm. long, about 3 cm. broad, at first lanate-tomentose on both surfaces, later glabrate: segments or lobes rather coarsely, somewhat unequally and sharply toothed; the terminal segment subreniform, the lateral ones (3 to 6 on either side) obovate-cuneate, becoming smaller towards the petiole: heads few, about 1 cm. high, radiate: involucre campanulate, subecalyculate and, as well as the bracteate peduncles, tomentulose; bracts of the involucre usually 21, lanceolate, acute, 6 mm. long: ray-flowers about 13; rays oblong, 6 to 7 mm. in length, 4-5-nerved: disk-flowers numerous, about 60: achenes pubescent.— Monogr. Senecio, I Th. 23 (1901) & in Engl. Bot. Jahrb. xxxii. 19 (1902), without complete characterization. — MEXICO. State of Nuevo Leon: Sierra Madre, near Monterey, 1 June, 1889, *C. G. Pringle*, no. 2894 (hb. Gray).

Senecio (§ Aurei) cyclophyllus Greenman, sp. nov.

An herbaceous perennial: stem simple, 3.5 to 5 dm. high, sparingly tawny-tomentose at the base and in the leaf-axils otherwise glabrous, striate, purplish: radical and lowermost stem-leaves subrotund, 4 to 7 cm. long, equally broad, cordate, crenate-dentate, green and glabrous above, more or less purplish and sparingly hirsute to glabrous beneath; petioles 5 to 8 cm. long: upper stem-leaves sessile, amplexicaul, lyrately pinnatifid with a relatively large terminal segment and narrowly obovate-cuneate unequally dentate lateral divisions: inflorescence terminating the stem in a many-headed subcorymbose cyme; bracts of the inflorescence linear-lanceolate to subulate, tawny-tomentulose, purplish-tipped: heads 7 to 9 mm. high, radiate: involucre campanulate, sparingly calyculate with minute bracteoles; bracts of the involucre about 21, lance-linear, 5 to 6 mm. long, acuminate, acute, more or less purplish-tipped, glabrous: ray-flowers commonly 13; rays orange-yellow: disk-flowers 50 to 60: mature achenes 2 mm. long, hispidulous.— MEXICO. State of Nuevo Leon: near Monterey, 1906, *C. G. Pringle*, no. 10,230 (hb. Gray), type; Cerro la Scilla, near Monterey, 20 March, 1902, *E. W. Nelson*, no. 6,672 (hb. U. S. Nat. Mus. and hb. Gray). A species somewhat intermediate in general aspect between *S. aureus* L. and *S. Cardamine* Greene. From the former it differs in having shorter petioles and a more rotund leaf-blade to the basal leaves; besides the terminal segment of the stem-leaves is relatively broader and more reniform, and finally the achenes are hispidulous. From *S. Cardamine*, on the other hand, *S. cyclophyllus* differs in its larger stature, size of foliage and leafy stem, and in the many-headed inflorescence.

Senecio (§ Aurei) Rosei Greenm.

An herbaceous perennial: root-stocks rather short, bearing several fleshy-fibrous roots: stem erect, 4 to 4.5 dm. high, un-

branched, glabrous below, slightly pubescent above, terminated by a single large radiate head, or bearing in addition 1 to 3 reduced heads: leaves petiolate, ovate, 2 to 3 cm. long, two-thirds as broad, obtuse, glabrous on both surfaces, subentire to sparingly and obtusely dentate; the lower leaves on long petioles, 2 to 4 times as long as the blade; the upper stem-leaves somewhat laciniate-dentate or sublyrate, not infrequently expanding at the base and subamplexicaul: peduncles somewhat enlarged above, pubescent: heads about 12 mm. high, including the rays 3 to 3.5 cm. broad: involucre campanulate, essentially naked; bracts of the involucre about 20, lanceolate-linear, 8 to 10 mm. long, acute, green, scarious-margined, glabrous except at the penicillate tip: ray-flowers 10 to 12; rays conspicuous, light yellow: disk-flowers numerous: achenes glabrous.— Monogr. Senecio, I Th. 24 (1901) & in Engl. Bot. Jahrb. xxxii. 20 (1902), without complete characterization.— Mexico. Territory of Tepic: in the Sierra Madre, near Santa Teresa, 10 August, 1897, *Dr. J. N. Rose*, no. 2,157 (hb. Gray, and hb. U. S. Nat. Mus.).

Senecio (§ **Amplectentes**) **heterodontus** Greenman, sp. nov.

An herbaceous perennial: roots fleshy-fibrous from a short perpendicular root-stock: stem erect, simple or branched, 0.5 to 1 m. high, nearly naked above, striate, glabrous to crisp-pubescent: leaves lanceolate, 1 to 3 dm. long, 1 to 4 cm. broad, slightly hirtellous-puberulent to essentially glabrous on the upper surface, pubescent beneath; the lowermost leaves, obtuse or acute, narrowed below, rather long winged-petiolate, unequally dentate or dentate-lobed; the upper stem-leaves, remote, sessile, amplexicaul, acuminate, more or less regularly denticulate, becoming bract-like toward the inflorescence: heads numerous, 8 to 10 mm. high, radiate, disposed in a terminal corymbose cyme: involucre campanulate, calyculate, glabrous, or slightly pubescent at the base: bracts of the involucre 13 (-21), lanceolate, 4.5 to 5.5 mm. long, acutish, terminated by a blackish penicillate tip: ray-flowers commonly 8; tube pubescent; pappus somewhat exceeding the tube: disk-flowers 48 to 50: achenes striate, glabrous.— *S. potosinus* Greenm. Monogr. Senecio, I Th. 25 (1901) & in Engl. Bot. Jahrb. xxxii. 21 (1902), without complete characterization, not *S. potosianus* Klatt.— Mexico. State of San Luis Potosi: Valley of San Luis Potosi, in mountains near San Miguelita, September, 1876, *Dr. J. G. Schaffner*, no. 280 (hb. Gray), type; in the region of San Luis Potosi, collection of 1878, *Parry & Palmer*, no. 536 (hb. Gray); Alvarez, 13 to 23 July, 1904, *Dr. E. Palmer*, no. 237 (hb. Gray, and hb. Field Mus.). This species may be found in herbaria under the name of "*Senecio multidentatus*."

Senecio (§ **Amplectentes**) **mohinorensis** Greenm.

Stem erect, striate, puberulent: leaves sessile, amplexicaul, pinnately lobed, lanceolate in general outline, 5 to 15 cm. long, 1 to 4 cm. broad, puberulent on both surfaces, slightly paler

beneath; lobes oblong, mucronate, acute, entire or few-toothed; the uppermost leaves reduced and laciniate-dentate to entire: inflorescence a terminal comparatively few-headed panicle; the branches usually bearing 3 heads: heads about 1.5 cm. high, radiate: involucre campanulate, conspicuously calyculate with linear-lanceolate green bracteoles; involucral bracts proper, lanceolate to lance-oblong, 10 to 12 mm. long obtuse, scarious-margined and, as well as the bracteoles, black-tipped and hirsute-pubescent with spreading jointed hairs: ray-flowers 8 to 10; rays yellow, elliptic-oblong, 10 to 12 mm. long, 4-nerved, the two middle nerves often branching into 3 divisions: disk-flowers about 50: achenes canescent-pubescent.—Monogr. Senecio, I Th. 25 (1901) & in Engl. Bot. Jahrb. xxxii. 21 (1902), without complete characterization.— MEXICO. State of Chihuahua: Mt. Mohinora, 1 September, 1898, *E. W. Nelson*, no. 4881 (hb. Gray, and hb. U. S. Nat. Mus.).

Senecio (§ **Amplectentes**) **platypus** Greenman, sp. nov.

An herbaceous perennial: stem simple or branched, striate, purplish, lightly floccose-tomentulose: leaves petiolate, ovate to ovate-lanceolate, 3 to 9 cm. long including the petiole, 1 to 4 cm. broad, mucronate-acute, entire to irregularly dentate, cuneate to subcordate at the base, floccose-tomentulose above, densely and permanently white tomentose beneath, thin and membranous; petioles 4 cm. or less in length, usually expanded and clasping the stem by an auriculate-stipuliform base: inflorescence a terminal few-headed tomentulose subcorymbose cyme; bracts linear-setaceous: heads 10 to 12 mm. high, radiate: involucre narrowly campanulate, calyculate with minute setaceous bracteoles; bracts of the involucre usually 21, lance-linear, 6 to 8 mm. long, glabrous except at the base, black-tipped: ray-flowers about 13; rays yellow: disk-flowers 40 to 45: achenes densely sericeous-hirtellous.— MEXICO. State of Nuevo Leon: Sierra Madre near Monterey, 21 December, 1906, *C. G. Pringle*, no. 10,352 (hb. Gray), type; on limestone ledges near Monterey, 12 March, 1906, *C. G. Pringle*, no. 13,882 (hb. Gray). The conspicuous stipular-like development at the base of the petioles renders this species easily recognizable, and quite distinct from any other species known to the writer.

Senecio (§ **Mulgedifolii**) **Conzattii** Greenm.

An herbaceous perennial: stem erect, simple or branched above, about 1 m. high, striate, subangulate, at first arachnoid-tomentulose, more or less glabrate: leaves oblong-lanceolate to lance-attenuate, 0.5 to 3 dm. long, 0.5 to 5 cm. broad, acute, glabrous or sparingly arachnoid above, permanently arachnoid-tomentose beneath over a green to more or less purple leaf-surface, dentate to merely callous-denticulate; the lowermost leaves gradually narrowed below the middle into a winged petiolar base, coarsely dentate to lyrately subpinnatifid; the upper leaves sessile and amplexicaul, becoming reduced towards

the corymbose-paniculate inflorescence to attenuate bracts: heads 10 to 12 mm. high, discoid, 35-40-flowered: involucre narrowly campanulate, calyculate with rather conspicuous bracteoles and, as well as the peduncles, pubescent with spreading hirsutish hairs; bracts of the involucre usually 13, lanceolate, acutish, slightly penicillate-tipped and, as well as the corollas, more or less purplish: achenes striate-ribbed, glabrous.— Monogr. Senecio, I Th. 25 (1901) & in Engl. Bot. Jahrb. xxxii. 21 (1902), without complete characterization.— Mexico. State of Oaxaca: Cerro de San Felipe, altitude 3,000 m., 14 November, 1897, *C. Conzatti & V. González*, no. 559 (hb.Gray), type; Oaxaca, altitude 1,750 m., July-August, 1900, *C. Conzatti & V. González*, no. 1,003 (hb. Gray); Hacienda de Caciques, District of Cuicatlan, altitude 2,130 m., 14 August, 1895, *Rev. Lucius C. Smith*, no. 613 (hb. Gray); mountains of Oaxaca, *Cuming* (hb. Gray).

Senecio (§ Mulgedifolii) decorus Greenm.

Stem erect, striate-grooved, glabrous or nearly so, more or less purplish; leaves runcinate-pinnatifid, 0.5 to 2.5 dm. long, 2 to 14 cm. broad, glabrous above, arachnoid-pubescent beneath; terminal lobe largest, somewhat triangular-acuminate; lateral lobes lanceolate to oblong-lanceolate, acuminate, acute, margin dentate with horizontally spreading and slightly unequal teeth; upper stem-leaves sessile and amplexicaul: inflorescence a terminal rather compact panicle: heads 12 to 15 mm. high, not infrequently somewhat nodding, discoid: involucre campanulate, conspicuously calyculate with broadish bracteoles: bracts of the involucre lance-linear and acute to somewhat oblong and slightly expanded above the middle to an obtuse apex, glabrous, the inner with scarious and slightly lacerated margins: flowers 35 to 45; corollas exceeding the involucre and, as well as the bracts and bracteoles, reddish-purple: achenes striate-ribbed, glabrous.— Monogr. Senecio I Th. 25 (1901) & in Engl. Bot. Jahrb. xxxii. 21 (1902).— Guatemala. Department of Zacatepequez: Volcan de Agua, altitude 3,350 m., April, 1890, *John Donnell Smith*, no. 2,361 (hb. Gray); Todos Santos, altitude 3,045 m., 26 December, 1895, *E. W. Nelson*, no. 3,637 (hb. Gray, and hb. U. S. Nat. Mus.).

Senecio (§ Mulgedifolii) jacalensis Greenm.

An herbaceous perennial: roots fleshy-fibrous: stem erect, 3 dm. or more high, from a thickish perennial base, rather leafy, striate, below glabrous, above especially in the inflorescence pubescent: lower leaves oblanceolate, 0.5 to 1.5 dm. long, 1.5 to 2.5 cm. broad, obtuse or acute, shallowly callous-dentate, narrowed below into a winged petiole, glabrous on both surfaces; upper stem-leaves sessile, amplexicaul, acuminate and more or less imbricated on the stem: inflorescence subracemose or paniculately racemose: heads large, 13 to 15 mm. high, discoid, not infrequently somewhat nodding: involucre campanulate, calyculate with rather large bracteoles, glabrous or slightly pubescent

at the base; bracts of the involucre subbiseriate, about 21, lanceolate-linear, 1 cm. long, obtuse or obtusish: flowers numerous, about 70: corollas, as well as the bracts of the involucre, often reddish: achenes striate, glabrous.— Monogr. Senecio, I Th. 25 (1901) & in Engl. Bot. Jahrb. xxxii. 21 (1902), without complete characterization.— *Senecio helodes*, Hemsley, Biol. Cent.-Am. Bot. ii. 241 (1881), in part, not Benth. *Cacalia racemosa*, Schz. Bip., acc. to Hemsl., l. c.—MEXICO. State of Guanajuato: Jacal, *Ehrenberg*, no. 1,293 (hb. Gray, hb. Roy. Bot. Mus. Berlin, and hb. Kew).

Senecio (§ **Mulgedifolii**) **rhyacophilus** Greenm.

Stem herbaceous, glabrous: leaves runcinate-pinnate with rather unequally and irregularly mucronate-dentate or sublobate segments and with rounded sinuses between the segments, glabrous on both surfaces, paler beneath, thin or membranous in texture, more or less expanded below into a laciniate-dentate amplexicaul base, 0.5 to 2 dm. long, 1 to 6 cm. broad; the uppermost leaves undivided, lance-attenuate from a rather broad base, coarsely toothed: inflorescence a terminal somewhat leafy pubescent panicle: heads 12 to 15 mm. high, discoid, about 24-flowered: involucre calyculate with linear-setaceous bracteoles, glabrous; bracts of the involucre usually 13, linear, about 1 cm. long, acute to obtusish and, as well as the corollas, more or less purplish: achenes striate, glabrous. Monogr. Senecio, I Th. 25 (1901) & in Engl. Bot. Jahrb. xxxii. 21 (1902), without complete characterization.— GUATEMALA. Department of Zacatepiquez: Volcan Fuego, altitude 2,735 m., November, 1889. *Heyde & Lux*, no. 4,502 (hb. Gray), exsiccatæ of John Donnell Smith. Department of Quiché: Chiul, altitude 2,400 m., April, 1892, *Heyde & Lux*, no. 3,379 (hb. Gray), exsiccatæ of John Donnell Smith.

Senecio (§ **Fruticosi**) **hirsuticaulis** Greenm.

Shrub: stem above and the branches, as well as the petioles, densely hirsute-pubescent with spreading hairs: leaves petiolate, ovate-oblong, 5 to 8 cm. long, 3 to 6 cm. broad, subcordate, slightly hirtellous above especially on the midrib and lateral nerves, later nearly glabrous, densely and permanently hirsute-tomentose beneath, subangulately 5-7-lobed with broad shallow sinuses, mucronate-denticulate; lobes conspicuously mucronate-acute; petioles stoutish, about 2 cm. long: inflorescence a terminal compound hirsute-tomentose corymb; peduncles setaceous-bracteate: heads about 1 cm. high, radiate: involucre narrowly campanulate, calyculate with setaceous bracteoles; bracts of the involucre usually 13, linear to lance-oblong, acutish, the inner with scarious suberose margins: ray-flowers commonly 8; rays yellow, 4-nerved: disk-flowers 20 to 25, exceeding the involucre: achenes glabrous.— Monogr. Senecio, I Th. 26 (1901) & in Engl. Bot. Jahrb. xxxii. 22 (1902), without complete characterization.— MEXICO. En route from San Luis Potosi to

Tampico, December, 1878 to February, 1879, *Dr. E. Palmer*, no. 1,114 (hb. Gray).

Senecio (§ **Fruticosi**) **santarosæ** Greenman, sp. nov.

Shrub: stem below covered with a grayish cortex, above more or less arachnoid-tomentulose: leaves petiolate, oblong-lanceolate, 1 to 2.5 dm. long, 3 to 7 cm. broad, acute or acuminate, shallowly sinuate-dentate, narrowed below to an obtuse base, rather prominently reticulate-veined, glabrous on both surfaces or slightly pubescent beneath especially on the midrib and lateral nerves, glabrate; petioles 3 to 7.5 cm. long, at first tomentulose, later becoming glabrous: inflorescence a terminal many-headed corymbose panicle: heads about 1 cm. high, radiate: involucre arachnoid-tomentulose to essentially glabrous; bracts of the involucre oblong, 5 to 7 mm. long, obtuse scarious-margined: ray-flowers usually 2; rays 4 to 5 mm. long, yellow: disk-flowers 3 to 5; corollas rather deeply 5-toothed, somewhat zygomorphic: pappus about as long as the corollas of the disk-flowers, copious, white: achenes glabrous.— Monogr. Senecio, I Th. 26 (1901) & in Engl. Bot. Jahrb. xxxii. 22 (1902). *Senecio Ghiesbreghtii*, var. *pauciflorus* Coulter, Bot. Gaz. xvi. 101 (1891), not *S. pauciflorus* Pursh.— Guatemala. Department of Santa Rosa: La Vega, altitude 1525 m., February, 1893, *Heyde & Lux* no. 4,520 (hb. Gray), exsiccatæ John Donnell Smith, type. Department of Guatemala: Sapote, altitude, 1,310 m., March, 1890, *John Donnell Smith*, no. 2,359 (hb. Donnell Smith, and hb. Gray). Department of Quezaltenango: Santa Maria, 5 February, 1906, *W. A. Kellerman*, no. 5,277 (hb. Field Mus.). Department of Solala: Volcano of Atitlan, 16 February, 1906, *W. A. Kellerman*, no. 5,353 (hb. Field Mus.).

Senecio (§ **Palmatinervii**) **adenolepis** Greenman, sp. nov.

Perennial: stem covered with a gray cortex; ultimate branchlets glandular-puberulent: leaves petiolate, palmately nerved, ovate-orbicular, 5-lobed, slightly peltate, in specimens at hand 7 cm. long, 7 to 8 cm. broad, dark green and hirtellous-puberulent above, paler and crisp-hirtellous beneath, mucronate-denticulate; lobes triangular-ovate and terminated by a mucro; petioles 6.5 cm. in length, slightly puberulent, purplish: inflorescence a terminal few-headed granulose-glandular cymose panicle; bracts lanceolate to linear-setaceous: heads 10 to 14 mm. high, radiate: involucre narrowly campanulate; bracts of the involucre usually 8, oblong-lanceolate, about 1 cm. long, acuminate, acute or acutish, externally short-glandular-pubescent with a few hirsute hairs intermixed: pappus copious, 6 to 7 mm. long, white: ray-flowers 5, about 1 cm. long; tube of the corolla 4 to 5 mm. long, externally sparingly pubescent; rays equalling or somewhat exceeding the tube, yellow: disk-flowers about 15; corollas 9 mm. long with a short tube gradually amplicated above into the 5-toothed limb; achenes glabrous.— Mexico. State of Morelos: Sierra de Tepoxtlan, altitude 2,285 m., 13

February, 1907, *C. G. Pringle*, no. 13,909 (hb. Gray). Related to *S. cordobensis* Hemsl., but differs in having smaller leaves, longer involucral bracts and more numerous flowers in the heads.

Senecio (§ **Palmatinervii**) **eriophyllus** Greenman, sp. nov.

Shrub: stem in the dried state of a dark gray or blackish wood, covered with a light gray cortex; ultimate branches white floccose-tomentose in the early stages, glabrate: leaves petiolate, ovate to ovate-oblong, 6 to 10 cm. long, 5 to 8 cm. broad, sinuate-angulate-lobed, entire or sparingly mucronate-denticulate, cuneate to subcordate at the base, at first densely and softly tomentose on both surfaces, later arachnoid-tomentose especially above; the lobes terminated by a short subcartilaginous mucro; petioles 2 to 3 cm. long, tomentose: inflorescence terminating the stem in a many-headed floccose-tomentose panicle: heads about 12 mm. high: involucre calyculate with minute subulate bracteoles, glabrous except at the base; bracts of the involucre 8, lance-linear to lance-oblong, 7 to 8 mm. long, obtuse or obtusish, bluntly keeled on the back, stramineous: flowers 12 to 15: achenes glabrous.— MEXICO. State of Oaxaca: hills near Tula, altitude 1680 m., 20 May, 1906, *C. G. Pringle*, no. 13,864 (hb. Gray). This species has its nearest affinity with *S. albonervius* Greenm.

Senecio (§ **Palmatinervii**) **Gilgii** Greenm.

Suffrutescent: stems at least above densely pubescent with spreading tawny jointed hairs: leaves long-petiolate, rotund, 1 to 3 dm. broad, cordate, 7-9-nerved from the base, sinuately lobed and the lobes again subtrilobate, mucronate-denticulate, hirtellous-pubescent on both surfaces; petioles 8 to 14 cm. long, densely pubescent: inflorescence a terminal panicle; heads large, 1.5 to 1.7 cm. high, radiate: involucre campanulate, calyculate, densely hirsute-pubescent; bracts of the involucre usually 13, oblong to oblong-lanceolate, nearly or quite 1 cm. long, 2.5 to 4 mm. broad, obtuse, more or less overlapping so as to appear subbiseriate, the innermost bracts with scarious margins: ray-flowers 8 to 10; ligules 6 to 7 mm. long, yellow, 4-5-nerved: disk-flowers about 30: achenes conspicuously striate, glabrous.— Monogr. Senecio, I Th. 26 (1901) & in Engl. Bot. Jahrb. xxxii. 22 (1902), without complete characterization. — MEXICO. State of Chiapas: near Pinabete, altitude 2,000 to 2,460 m., 8 February, 1896, *E. W. Nelson*, no. 3,773 (hb. Gray, hb. U. S. Nat. Mus., and hb. Royal Bot. Mus. Berlin).

SENECIO HETEROGAMUS Hemsl., var, **Kellermanii** Greenman, var. nov.

Leaves long-petiolate, suborbicular or somewhat reniform, 7 to 15 cm. long, 9 to 20 cm. broad; petioles 4 to 14 cm. long; inflorescence including the involucre villous-hirsute with long jointed red or reddish-brown hairs: other characters as in the species.— GUATEMALA. Department of Sacatepequez: Volcano

of Agua, 15 February, 1905, *W. A. Kellerman*, no. 4,706 (hb. Field Mus.).

Senecio (§ **Palmatinervii**) **lanicaulis** Greenm.

Shrub: stem, at least above, densely lanate-tomentose: leaves petiolate, subrotund to reniform, cordate, palmately 7-9-nerved, 0.7 to 2.5 dm. broad, shallowly sinuate-lobed, margined with unequal conspicuous more or less curved mucronulations, at first tomentulose above, densely and permanently lanate-tomentose beneath; petioles stout, 0.3 to 1.5 dm. long: inflorescence a terminal many-headed lanate-pubescent compact compound corymb; bracts setaceous: heads 1 cm. high, radiate: involucre narrowly campanulate, calyculate, tomentulose at the base, glabrous above; bracts of the involucre about 13, lanceolate to lance-oblong, acutish, essentially glabrous, the inner scarious-margined: ray-flowers 6 to 8; ligules 4-nerved: disk-flowers 12 to 20, exceeding the involucre: achenes striate, glabrous.— Monogr. Senecio, I Th. 26 (1901), & in Engl. Bot. Jahrb. xxxii. 22 (1902), without complete characterization.— Mexico. State of Chiapas: near Pinabete, altitude 1,800 to 2,400 m., 8 February, 1896, *E. W. Nelson*, no. 3,771 (hb. Gr., and hb. U. S. Nat. Mus.). Guatemala. Department of Quiché: Chiul, altitude 2,400 m., April, 1892, *Heyde & Lux*, no. 3,377 (hb. Gray), exsiccatæ of John Donnell Smith.

Senecio (§ **Palmatinervii**) **Langlassei** Greenm.

Shrub 3-4 m. high: leaves petiolate, palmately nerved, ovate-rotund in general outline, 1-2 dm. long, equally broad, 7-13-lobed, densely granulose on the upper surface with hirsutish hairs intermixed, especially on the nerves, white-tomentose beneath as well as on the petioles; lobes mucronate-apiculate, denticulate-margined: inflorescence a terminal round-topped many-headed paniculate cyme: heads 1 cm. or less high, radiate: involucre narrowly campanulate, sparingly calyculate; bracts of the involucre narrowly oblong-lanceolate, acutish, scarious-margined, dorsally granulose-glandular, thickened along the median line: ray-flowers 6 to 8 with a slender 5 mm.-long puberulent tube equalling the narrowly oblong 4-nerved yellow ray: disk-flowers 15 to 20: achenes glabrous.— Monogr. Senecio, I Th. 26 (1901) & in Engl. Bot. Jahrb. xxxii. 22 (1902), without complete characterization.— Mexico. "Etats de Michoacan et de Guerrero," Sierra Madre, altitude 1,600 m., 21 April, 1899, *E. Langlassé* no. 1,005 (hb. Gray, and hb. Roy. Bot. Mus., Berlin).

Senecio (§ **Palmatinervii**) **reglensis** Greenm.

Stout herbaceous perennial, 1 to 2 m. high: stem glabrous, smooth, brownish-lineolate at least above: leaves petiolate, palmately nerved, ovate-rotund, 5 to 7 cm. or more long, nearly or quite as broad, rather deeply 5-7-lobed, hirsutish-pubescent on both surfaces especially beneath; lobes acute mucronate-

apiculate; margins cartilaginous-denticulate: inflorescence a terminal round-topped many-headed paniculate cyme: heads subcylindrical, 10 to 12 mm. high, radiate: involucre calyculate with bracteoles less than half the length of the 8 oblong-lanceolate obtusish bracts of the involucre: ray-flowers mostly 6: disk-flowers 18 to 20, equalling or slightly exceeding the involucre; pappus about as long as the corolla: achenes glabrous.— Monogr. Senecio, I Th. 26 (1901) & in Engl. Bot. Jahrb. xxxii. 22 (1902), without complete characterization.— MEXICO. State of Vera Cruz: Regla, *Ehrenberg*, no. 454 (hb. Gray).

Senecio (§ **Multinervii**) **Cooperi** Greenm.

Stout herb?: stem at least above pubescent with brownish hirtellous hairs: leaves large, oblong-ovate, including the petiole 3 to 3.5 dm. long, 1 to 1.5 dm. broad, rather blunt or narrowed at the apex, mucronate-acute, merely denticulate on the margins to somewhat sinuate and unequally dentate, the teeth tipped with a cartilaginous mucro, few and irregularly lobed at the base with rounded open sinuses, decurrent on the petiole, sparingly puberulent on both surfaces; midrib and the numerous lateral nerves prominent beneath: inflorescence corymbose: heads 1.5 cm. high, radiate: involucre barely calyculate with a few small inconspicuous bracteoles; bracts of the involucre 8, linear, acutish, slightly penicillate-tipped, otherwise glabrous: ray-flowers about 8; rays linear-oblong, conspicuous: disk-flowers with a long slender tube and a rather deeply 5-lobed limb: achenes pubescent.— Monogr. Senecio, I Th. 26 (1901) & in Engl. Bot. Jahrb. xxxii. 22 (1902), without complete characterization.— COSTA RICA. Province of Cartago: Cartago, altitude 1,310 m., December, 1887, *Juan J. Cooper*, no. 5,803 (hb. Gray), exsiccatæ John Donnell Smith, distributed as "*Senecio multivenius* Benth."; "la Division, vallée du Général", altitude 2,160 m., *Pittier*, no. 3,405 (hb. Gray), in part.

Senecio (§ **Multinervii**) **megaphyllus** Greenman, sp. nov.

Stem above arachnoid-tomentulose, striate: leaves large, oblong-oblanceolate, including the petiole 3 to 5 dm. long, 1 to 2 dm. broad, acute or acuminate-acute, more or less sinuate, cartilaginous-dentate, narrowed below into a winged petiole half-clasping the stem, arachnoid-tomentulose on both surfaces, somewhat glabrate above except on the midrib; midrib and lateral nerves prominent beneath: inflorescence a terminal corymbose-panicle: heads many, on slender setaceous-bracteolate peduncles: involucre cylindrical; bracts of the involucre 8, linear, 10 mm. long, 1 mm. broad, acutish, glabrous, stramineous, scarious-margined: ray-flowers 3 to 5, yellow: disk-flowers 5 to 8, rather deeply 5-lobed: achenes glabrous.— *S. multivenius*, var. *oliganthus* Greenm. Monogr. Senecio, I Th. 26 (1901) & in Engl. Bot. Jahrb. xxxii. 22 (1902), without complete characterization, not *S. oliganthus* DC.— COSTA RICA. "Bords du Paraita Grande au Copey," altitude 1,800 m., *A. Tonduz*, no. 11,700 (hb.

Gray, and hb. Inst. Physico.-Geogr. Cost. Rica); "bords du rio Paraita au Copey," altitude 1,800 m., *A. Tonduz*, no. 11,844 (hb. Gray, and hb. Inst. Physico.-Geogr. Costa Rica). The long slender cylindrical few-flowered heads with longer and narrower involucral bracts, as shown by additional material, render this species of easy separation from *S. multivenius* Benth. with which it has been hitherto associated.

Senecio (§ Terminales) chicharrensis Greenm.

Fruticose: stem leafy and white-tomentose above: leaves long-petiolate, oblong-ovate, 1.2 to 2.7 dm. long, 1 to 1.8 dm. broad, subcordate to abruptly contracted below to an unequal base, glabrous above, floccose-tomentose beneath especially along the prominent midrib and lateral nerves, sinuately lobed; lobes mucronate, acute, remotely mucronate-denticulate; petioles 8 to 10 cm. long, more or less floccose-tomentose: inflorescence abruptly terminating the stem in small and many-headed flocculent close compound corymbs on rather long peduncles: heads about 8 mm. high, radiate: involucre 4 mm. high, essentially ecalyculate or with a few small inconspicuous bracteoles; bracts of the involucre 8, oblong or linear-oblong, obtusish, glabrous, the inner scarious-margined: ray-flowers 2 or 3; rays short, oblong 2 to 2.5 mm. long: disk-flowers about 9: achenes glabrous.— Monogr. Senecio, I Th. 26 (1901) & in Engl. Bot. Jahrb. xxxii. 22 (1902), without complete characterization.— Mexico. State of Chiapas: near Chicarras, altitude 1830 m., 12 to 15 February, 1896, *E. W. Nelson*, no. 3,796 (hb. Gray, and hb. U. S. Nat. Mus.). A species similar to *S. arborescens* Steetz, but with different foliage and involucre. It is also related to *S. Gürkei* Hieron., a species of New Granada, and to *S. grandifolius* Less., but these again have a very different pubescence and involucre.

Senecio (§ Terminales) copeyensis Greenm.

Arborescent: stem above tomentose: leave petiolate, large, ovate-oblong in general outline, 2 to 3 dm. long, 1.5 to 2 dm. broad, pinnately lobed with deep narrow sinuses, abruptly or somewhat gradually contracted at the base into the petiole, reticulately veined above and sparingly puberulent over the upper surface except along the tomentulose midrib, at first tomentulose beneath later somewhat glabrate; lobes narrowly oblong to lance-oblong, 2.5 to 10 cm. long, 1 to 2.5 cm. broad, terminated by a stoutish cartilaginous mucro, entire or remotely and inconspicuously cartilaginous-denticulate, revolute-margined; petioles nearly or quite 1 dm. long: inflorescence abruptly terminating the stem in two or more compound many-headed tomentose corymbose panicles: heads about 8 mm. high, discoid: involucre calyculate with few setaceous-linear bracteoles, slightly tomentose to essentially glabrous; bracts of the involucre usually 8, lanceolate to oblong-lanceolate, 4 to 5 mm. long, brownish or even blackish in the dried state, the inner with broad scarious

margins: flowers about 10 with a rather slender tube gradually ampliated above into a deeply 5-lobed limb: achenes glabrous. — Monogr. Senecio, I Th. 26 (1901) & in Engl. Bot. Jahrb. xxxii. 22 (1902), without complete characterization.— COSTA RICA. "Forêts du Copey," altitude 1,800 m., February, 1898, *Ad. Tonduz*, no. 11,663 (hb. Gray, and hb. Inst. Physico-Geogr. Costa Rica).

Senecio (§ **Terminales**) **serraquitchensis** Greenm.

Suffruticose: stem above tawny-tomentose: leaves petiolate, oblong-lanceolate to somewhat oblong-obovate, 1.2 to 2.5 dm. long, 3 to 9 cm. broad, mucronate-acute, slightly sinuate, remotely cartilaginous-denticulate, narrowed below to the tomentulose 2.5 to 6.5 cm.-long petiole, at first tomentulose on both surfaces especially on the midrib and lateral nerves beneath, but soon glabrate and rather strongly reticulate-veined: inflorescence abruptly terminating the stem in one or more long-pedunculate compound many-headed corymbs: heads about 1 cm. high, radiate: involucre barely calyculate with minute bracteoles; bracts of the involucre 8, narrowly oblong, about 4 mm. long, obtuse, turning blackish in drying: ray-flowers 5; ligules short, 4-nerved; tube shorter than the pappus: disk-flowers 5 or 6; corollas rather deeply 5-lobed: achenes glabrous.— Monogr. Senecio, I Th. 26 (1901) & in Engl. Bot. Jahrb. xxxii. 22 (1902), without complete characterization. *S. Ghiesbreghtii*, var. *Uspantanensis* Coulter in Bot. Gaz. xx. 52 (1895), in part. — GUATEMALA. Department of Alta Vera Paz: Serraquitché, altitude 760 m., April, 1889, *John Donnell Smith*, no. 1,598 (hb. Gray).

Senecio (§ **Terminales**) **uspantanensis** Greenm. Monogr. Senecio, I Th. 26 (1901) & in Engl. Bot. Jahrb. xxxii. 22 (1902). *S. Ghiesbreghtii*, var. *uspantanensis* Coulter, Bot. Gaz. xx. 52 (1895), in part, as to *Heyde & Lux*, no. 3,368 (hb. Gray) and *Botteri*, nos. 609, 820 (hb. Gray).

Although *S. uspantanensis* is similar in habit to *S. serraquitchensis*, yet the former differs markedly in its glabrous stem and foliage, longer and fewer (5 instead of 8) involucral bracts.

TRIXIS PRINGLEI Rob. & Greenm. Proc. Am. Acad. xl. 10 (1904).

Specimens collected by Professor C. Conzatti at De Almoloyas á Sta. Catarina, Oaxaca, Mexico, at an altitude of 1,000 m., 26 December, 1906, no. 1,646 (hb. Field Mus.) agree well with specimens secured by Mr. Pringle on which the species was based, except the leaves in the Conzatti plant have a maximum breadth of 2.5 centimeters.

Jungia Pringlei Greenman, sp. nov.

Stem terete, pubescent: leaves petiolate, orbicular-ovate, cordate, 7-9-lobed, hirtellous-puberulent and rather strongly reticulate-nerved above, crisp-hirsute-pubescent and atomiferous-glandular beneath; lobes ovate-triangular, dentate, mu-

cronate-acute; petioles 1.5 to 10 cm. long, estipulate, pubescent: inflorescence a terminal many-headed open panicle; bracts of the inflorescence more or less foliaceous, ovate-oblong, lance-elliptic to linear, dentate to entire: heads about 1 cm. high, 18-22-flowered: involucre narrowly campanulate; bracts of the involucre linear-lanceolate, 8 mm. long, acuminate, acute, pubescent with jointed hirsute hairs intermixed with a glandular puberulence: flowers bilabiate; the outer lip of the exterior circle of flowers ligulate, 3 mm. long, spreading, pale yellow or whitish: pappus exceeding the involucre, setulose, silvery white: immature achenes narrowed above, pubescent.— Mexico. State of Michoacan: Uruapan, collection of 1906, *C. G. Pringle*, no. 10,357 (hb. Gray; fragment and photograph in hb. Field Mus.).